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THE USE AND ABUSE OF BACTERIAL THERAPY *

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As one of the earlier pupils of Wright at St. Mary's Hospital, London, I trust that some of the things I shall say in the discussion of this subject may not seem to be at variance with the teachings of that brilliant student of immunity. There can be no doubt of the value of his researches and their practical application in that realm of medicine with which we are so frequently concerned. But as often happens with any more or less complicated and difficult mode of procedure, the method has been misunderstood and misapplied by many whose optimism carried them further than the facts warranted. It will not be necessary to discuss in detail the features of immunity conferred by the inoculation of bacterial cells or their products in the varied types of infection to which the method is applicable, but rather to consider the practical aspects of treatment involved.

If success is to be secured it will be necessary, in the consideration of any infection, to obtain certain definite information on the following points:

1. The localization of the infection, whether general or focal, whether pyemic or septicemic, whether saprophytic from retained necrotic tissue, whether acute or chronic, as well as other factors, such as local tension of the focus of infection under pressure, and the local blood-supply.

2. Definite knowledge of the predominating type of infection present and of the secondarily infecting organisms.

Speculation should not enter into the consideration of the rational worker, for, if definite knowledge in the application of the method is lacking — if hit-or-miss empirical therapy is employed — the guess may as well be wrong as right and the method discredited. One should remember that bacterial vaccines are toxic products, capable of good or harmful results, according to the method of use. No one will deny the value of morphin within certain limitations, but we all condemn its promiscuous administration. It is safe to conclude that if we depended more on first-hand information obtained by methods of clinical research and less on the advertisements of well-meaning manufacturers of biologic products, in which the evidences of clinical research are many times lacking, the practical results of bacterial therapy would be better.

The statement has repeatedly been noticed, in certain trade journals devoted to biologic products, that the use of vaccines can do no harm. One such journal† has recently recommended the use of mixtures of bacteria for such conditions as vertigo, pruritus ani, hay fever, rheumatism and sciatica. It has also published an article dealing with the treatment of gall-stones by vaccines and mentioned an abstract in which heart-block is spoken of as a streptococcus infection. The concern under whose auspices this journal is published has advertised at a recent medical meeting the use of vaccines in appendicitis. The motive in such instances is not difficult to discern. There may be some ground for the belief that if vertigo, as a symptom, is the result of middle-ear infection or infection of the sinuses, relief may be obtained through the administration of a suitable vaccine, providing free drainage is maintained. But it is, of course, irrational to advise the use of vaccines, without the preliminary bacteriologic knowledge first necessary, and to disregard other possible causes. Likewise in heart-block it is a far from desirable mental attitude to disregard the commonly known etiologic factors and to select a possible cause too remote for serious consideration.

RHEUMATISM

It may not be out of place at this time to speak of the therapy of rheumatism by a now well-advertised bacterial product called "Rheumatism Phylacogen." In the first place, the etiology of acute or chronic rheumatism is unknown and the treatment purely empirical. If the bacterial factors were known and could be isolated, it is possible that good results might be obtained from bacterial therapy. But until such knowledge is available, the treatment is speculative. To inoculate individuals with heterogeneous mixtures of bacteria, hoping to benefit those with gouty types of arthritis or those with atrophic eroded cartilages in arthritis deformans, both of which come under the broad conception of rheumatism, is of course ridiculous. It is not intended to convey the impression that joint manifestations and disability may not result from chronic focal infections elsewhere in the body. Instances are common due to chronic infected necrotic masses in the tonsils, to chronic sinusitis or to pyorrhea alveolaris, in which the joint manifestations clear up when the cause is removed. In such cases a supplemental course of vaccine therapy with the organisms isolated from the focus of infection, might augment the patients' resistance after the removal of the cause and as such would be rational treatment.

The preparation "Rheumatism Phylacogen," however, is made up of the metabolic products of a number of strains of pathogenic bacteria, and may truly be called a shotgun mixture with no scientific basis for its use. Other products such as "Gonorrhea Phylacogen," "Erysipelas Phylacogen" and "Mixed Infection Phylacogen" are on the market.

* An address before the Kent County Medical Society, Grand Rapids, Mich., Oct. 9, 1912.

† The Bacterial Therapist, G. H. Sherman, M.D., Editor.

In connection with this subject, it may be of interest to quote from a recent reply by the editor[1] of THE JOURNAL to a correspondent:

> The resolution of our correspondent not to use this remedy since he knows nothing of it, except the information furnished by its promoters, is the proper one. Physicians have no moral right to employ remedies of whose nature they are ignorant, nor should they accept the statements of interested parties who fail to give them scientific information. "Rheumatism Phylacogen" is one of the series of proprietaries now being put on the market, based on a theory of the originator that it is possible and necessary in every infection, not only to combat the action of the principal causative agent, but also to counteract the influence of other organisms, supposed to be always present, which produce a mixed infection. For meeting this supposed mixed infection, a mixture of the metabolic products of a large number of organisms is made the base of the remedy to be administered. For instance, if the patient has pneumonia, the action of the pneumococcus may be aggravated by the streptococcus, and, therefore, a dose of streptococcus poison is added to the treatment. For fear the meningococcus may be overlooked, some of its metabolic products are added, and so forth. We have no definite information as to the particular organisms whose metabolic products enter into this "shotgun" base, so that the remedy is essentially a secret one. Moreover, as it is said to be produced by the action of pathogenic organisms, it must be of the nature of a toxin and presumably a dangerous one. In any event, until reliable, unbiased evidence as to its composition and action is available, it must be presumed that the injection of these toxins of unknown origin may have an injurious effect. . . .
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> The honest physician—one who is honest with himself and with his patients—will not lend himself to such experimentation. Let any one who undertakes the use of such a remedy remember that if bad results ensue, he, and not the manufacturer, will be held responsible.

I am aware that many physicians may be able to testify from their experiences that good results have been obtained from the use of these preparations. So are we familiar with many vaunted but now forgotten cures. The fact remains that such improvement as seemed to follow in certain instances has probably resulted in spite of the treatment, not because of it.

TUBERCLE INFECTIONS

In 1909 and 1910, I published the results we had been able to obtain in a limited number of cases of tuberculosis treated with different forms of tuberculin. In some of these opsonic determinations were made, in others the agglutination of the dead tubercle bacillus by the patient's serum, in others the precipitin reaction with the serum, while in others the clinical evidences alone served as a basis for the administration. None of these methods to control the administration of tuberculin sufficed in all cases; for what served as a sufficient immunizing response in one served to produce in others a prolonged negative phase of diminished resistance. I am convinced of the good results which may follow the administration of tuberculin in suitable cases, in suitable institutions, by men experienced in its use. As Pottenger has aptly said, "A hypodermic syringe filled with tuberculin cannot cure tuberculosis. It requires an intelligent brain to guide it."

There is at the present time, however, no adequate method of controlling the dosage. The opsonic index is but one of the methods of estimating the phase of immunity present, and since, in considering the index alone, we neglect other equally important phases of the process, such as the agglutinins, bacteriolysins and bactericidins, it is apparent that the knowledge obtained is incomplete. While half the truth is better than none at all, in this instance it does one little good, for it is a matter of common experience to see patients improve with a persistently low opsonic curve, while others may not be doing well with a persistently high index. I have never been able to satisfy myself that tuberculin-treated patients, in the aggregate, improved any more under its use than those without it.

I have, on the contrary, repeatedly seen harmful results from its indiscriminate use, in which, without careful attention to the clinical symptoms after each dosage, the physician blindly followed the serial dilution recommended by the manufacturer, with the result that he overwhelmed his patients with doses of toxins against which the immunizing machinery was already taxed to the utmost. There can be no doubt that lowered resistance, due to large doses of tubercle toxin, may be responsible for pleurisies with effusion developing in the course of otherwise favorably progressing lesions, for the suppuration occurring in glands which might otherwise have become healed with fibrous tissue, for hemoptysis which occasionally occurs, and for nephritis which may be transient or permanent.

There is much evidence to show that Nature makes the endeavor to auto-inoculate tuberculous individuals by setting free into the circulation toxins or endotoxins from the infected tissues through overactivity. If slight exercise causes a rise in temperature, with any marked degree of index alteration or with auscultatory changes over the lungs, it is certain that auto-inoculation is taking place. It is difficult and, indeed, practically impossible to control the degree of auto-inoculation by exercise, and patients who give evidence of continual auto-inoculation should have their amount of exercise restricted. This includes deep breathing.

The most favorable cases for vaccine treatment are those of chronic type in good nutrition and with no complications; those considered under the head of slowly advancing lung involvement with little or no fever, or other evidence of secondary infection, in whom, due either to an avirulent strain of bacillus or to good resisting powers, the progress of the disease is not rapid.

The acute early pulmonary cases with advancing involvement and active symptoms, such as rapid loss of weight and fever, will do better if the five classical essentials for the management of such cases are supplied, namely, (1) intelligent supervision, (2) fresh air, (3) sunshine, (4) good food and (5) rest.

In the treatment of tuberculous glands and sinuses, we are all aware of the unsettled controversy concerning the rôle played by bovine tubercle bacilli in these conditions. The consensus of opinion is against the view of Koch, who has reiterated his unbelief in the infectiousness of bovine tubercle for man. In intestinal tuberculosis, scrofulous glands and in many tuberculous sinuses leading from joints or bone, the bovine type of bacillus has been found. Dowd's[2] figures give 31 per cent. of twenty-nine cases of cervical tuberculous glands due to the bovine type. Moss[3] has stated that bovine bacilli were demonstrated in 20 per cent. of 306 tuberculous individuals, while the feeding experiments of Vansteenberghe and Grysez have proved that tubercle bacilli were absorbed by the intact intestinal mucosa and that extensive deposits were found later in the mesenteric glands, lungs and viscera. This may occur whether the human

1. Queries and Minor Notes, THE JOURNAL A. M. A., Aug. 10, 1912, p. 464.

2. Dowd, C. N.: Surg., Gynec. and Obst., March, 1909.
3. Moss, W. L.: Bull. Johns Hopkins Hosp., February, 1909.

or the bovine type is the infecting agent. Ritchie[4] has recorded undoubted cases of lung infection by bacilli of the bovine type and Grober's demonstration of a direct connection between the cervical lymphatics and the pleura and lungs explains the possibility of lung infection by either type of bacillus by extension from the tonsils.

Since then, in the consideration of this problem, without the elaborate laboratory facilities necessary to determine in each instance the type of organism present, whether in lung, pleura, gland or bone, it seems irrational to employ tuberculin promiscuously as a matter of experiment. It has certainly been natural to those of us who have watched the results obtained to question the advisability of its general use. On the other hand, if for one reason or another it is decided best to administer tuberculin, small doses, from 1/1,000 to 1/100 mg. according to Wright's method, have the advantage of comparative safety and are therefore to be recommended. In surgical tuberculosis, tuberculin therapy has given good results according to Hastings'[5] recent comprehensive article, if overdosage is carefully avoided and if attention is paid to the secondary infecting organisms. I doubt, however, if any surgeon can show that patients with tuberculous glands do not have so many recurrent operations under tuberculin treatment as those without it.

THE BACTERIEMIAS

I have had good results in the treatment, by means of an autogenous vaccine, of a few patients with streptococcus septicemia. On the other hand, I am not convinced, despite the rapid increase of favorable literature on the subject, that the results secured by vaccines will be any better than the results secured through the use, in suitable cases, of antistreptococcus or streptolytic serum and normal human serum. The results with bacterial vaccines have been gratifying in a few instances. In one patient, following an abortion between the third and fourth month of pregnancy, there was a rigor on the sixth day. The lochia were serosanguineous and foul in odor. Blood-cultures gave colonies of hemolytic streptococci on blood-agar. Some placental masses and clots were washed out of the uterus and an injection of 50 millions trivalent streptococcus stock vaccine was given. The temperature ranged from 103 to 104 F. The patient's condition was complicated by an infective periostitis and arthritis involving the right humerus and fibula. In all, six injections were given. The temperature reached normal on the seventh day of treatment, and the recovery of the patient was uneventful.

In this connection the work of Lea and Sidebotham[6] and of Heyemann[7] serves to bring to mind facts known before, but not generally appreciated, in reference to the presence of organisms in the parturient uterus. Lea and Sidebotham found that in 20 per cent. of fifty-eight cases hemolytic streptococci were present during the puerperium and yet produced no symptoms; while Heyemann found hemolytic streptococci in the lochia and blood of 17 per cent. of 125 puerperal cases with fever.

In Heyemann's series only those patients died whose blood contained streptococci, while those recovered in whose lochia, but not in whose blood, streptococci were found, even though accompanied by high temperature and evidence of serious infection.

The conclusion reached by these authors is that the presence of hemolytic streptococci in the lochia, or vaginal secretion, cannot, in itself, be considered an indication of systemic infection. It is obvious that in many cases of apparent septicemia the patients recover without specific therapy, and, as stated by Potter,[8] one must be careful in attributing the cure solely or partly to the treatment employed. The presence of hemolytic streptococci in the cavity of the parturient uterus undoubtedly increases the danger of systemic infection. It is a curious fact that such a comparatively large percentage of parturient uteri with fever contain them and no other serious symptoms follow.

In arriving at a diagnosis, by no cultural methods unfortunately can the virulent strains of organisms be differentiated from the non-virulent. It is essential, therefore, in order to obtain with certainty the strain doing the damage in septicemias, to obtain the culture for the preparation of the vaccine directly from the blood-stream. This is easily done by puncturing a vein with a sterile syringe with a capacity of from 2 to 5 c.c. containing a cubic centimeter or two of sodium citrate or ammonium oxalate solution to prevent clotting. The blood is then inoculated into tubes of sterile broth, ascitic broth or serum broth. If it is not possible to do this, a polyvalent vaccine corresponding to the predominant organisms present in the cavity of the uterus may be used. Probably from 70 to 80 per cent. of puerperal septicemias are due to streptococci or mixed infections of strepto-colon bacilli.

In considering the enormous mortality of puerperal septicemia, it goes without saying that vaccine inoculations or any method of rational procedure offering the slightest hope should be utilized. The attempt, so often made, however, to transfer active immunity in an animal by means of the blood-serum to a patient in this type of infection leads in a majority of cases to failure. On the other hand, I have seen beneficial results follow the use of antistreptococcus, streptolytic and normal human serum in a few cases of septicemia complicating tonsillitis and scarlatina. So far as I am aware there has been no reported recovery in *Streptococcus viridans* septicemia by any mode of treatment. These cases seem to be inevitably fatal.

Reasoning from present-day conceptions of the problems of immunity it may seem unreasonable to expect beneficial results to follow the administration of bacterial vaccines in the treatment of septicemic infections. In fact, the whole question is still *sub judice*. There can be no serious objection, however, to the use of appropriate serums as well as the use of bacterial vaccines in septicemia, when the dosage of the vaccines is controlled by appropriate bacteriologic studies so far as practicable in each case. In 1910, a patient with septic endocarditis and septicemia of six weeks' standing following curettage and septic thrombosis or embolism of pelvic veins was treated successfully by means of bacterial vaccines. The blood-culture showed a *Staphylococcus aureus*. The patient was given doses of from 200 to 300 millions every five days for about ten weeks; recovery followed, although of course the valvular damage was permanent.

Typhoid fever is a bacteriemia and as such has been treated by bacterial vaccines with beneficial results by

4. Ritchie, L. C. P.: Lancet, London, Nov. 16, 1907.
5. Hastings, T. W.: Am. Jour. Med. Sc., August and September, 1912.
6. Lea, A. W. W., and Sidebotham, E. J.: Jour. Obst. and Gynec., Brit. Empire, January, 1909.
7. Heyemann, T.: Arch. f. Gynäk., 1908, lxxxvi, No. 1.
8. Potter, N. B.: Further Observations on Opsonins in Normal and Pathologic Serums, THE JOURNAL A. M. A., Nov. 30, 1907, p. 1815.

Watters and Eaton,[9] Callison,[10] Elliott,[11] Leishman,[12] and Meakins and Foster.[13] Bacterial therapy in typhoid is an open question, but, if used at all, the dosage should be large enough to secure evidence of protective response as measured by the only practical method now available, namely, increased agglutinative power on the part of the patient's blood. Smallman[14] has found that 300 millions represent the minimum efficient dose, although Watters and Eaton believe a dose of from 50 to 100 millions sufficient.

In typhoid fever, the varying virulence of different epidemics of the disease make it necessary to exercise care in the consideration of statistics as the result of any single form of treatment.

Typhoid vaccine may be used to advantage in the treatment of typhoid carriers. I have in the past two years reported two such instances.[15]

In gonococcic endocarditis and bacteriemia, I have seen beneficial results in one instance follow the use of antigonococcic serum and gonococcic vaccine. As mentioned above, there can be no serious objection to this method of treatment in any of the bacteriemias provided the necessary bacteriologic studies are made to insure appropriate correctness of diagnosis and dosage. In gonococcus arthritis, the sequel of bacteriemic invasion, good results may be expected from the use of bacterial vaccines, when combined, in my experience, with Bier's passive hyperemia. It has been found wise to begin with small doses, according to the virulence of the vaccine strain and to increase gradually, depending on signs of local and general reaction.

LOCALIZED STAPHYLOCOCCUS INFECTIONS

Possibly the most gratifying results in bacterial therapy have been obtained in the treatment of localized abscesses, furuncles or carbuncles due to staphylococci. I treat such conditions as follows: early incision to allow the escape of stagnant lymph, at which time a culture is taken; a Bier suction-cup is then applied for perhaps five minutes, after which a compress is applied, to be kept moist with a solution of sodium citrate 1 per cent. and sodium chlorid 2 per cent. This serves two purposes, to keep the flow of lymph by osmosis outward because the salt solution is hypertonic and to prevent the obstruction of free drainage, by clotting, since the lymph is decalcified by the sodium citrate. It is one of the essentials of bacterial therapy to keep at the point of infection a fresh supply of blood and tissue lymph. An injection of a stock staphylococcus vaccine is made until the autogenous vaccine is ready for use. The results by this mode of treatment have been better than by any other method. In fact, it may be stated that in any localized infection due to staphylococci, such as empyema wounds, sinuses, and adenitis, good results may be expected from bacterial vaccines providing free drainage and fresh blood-supply to the infected area are maintained.

In acne due to staphylococcus, the results have been good when combined with curettage of the face and hot applications to increase the blood-supply. With the acne bacillus vaccine our experience has not been satisfactory.

In one patient, the first to whom I applied the principle of vaccine therapy five years ago, an empyema pleurae following measles was treated by excision of a portion of two ribs and evacuation of nearly two quarts of pus. The lung gradually expanded and almost filled up the cavity, which, however, continued to discharge for five months. Antiseptic irrigations of all kinds were used and on several occasions the attempt was made to do away with the tube, but such attempts were followed by rise of temperature and chills. A culture from the wound showed *Staphylococcus aureus* from which a vaccine was prepared. After four inoculations, four to six days apart, the discharge was lessened. After six, the tube was removed permanently with prompt closure of the sinus. The patient has remained perfectly well.

In this connection, concerning the use of antiseptic irrigations in infected wounds, there is much to be said. Reasoning from our latter-day knowledge, little seems to be gained through their use except the mechanical removal of septic material, which can be as well accomplished by the use of a hypertonic salt solution, which tends to keep the flow of lymph by osmosis outward. We shall, in fact, accomplish much more by abstaining from the use of solutions damaging to the vitality of tissue, blood and lymph phagocytes thrown out in the wound area.

In six cases of staphylococcus sycosis a prompt cure followed two or three inoculations of a polyvalent staphylococcus vaccine. No other treatment was used except daily shaving and a bland ointment.

Ten cases of acute otitis media with perforation following influenza and measles were apparently benefited by the use of an autogenous vaccine. All were due to *Staphylococcus albus* and *aureus*. The discharge, which had been profuse for three or four weeks before the inoculations, was absent after two or three inoculations at five-day intervals. In two instances of chronic otitis media the *Bacillus pyocyaneus* was isolated. They were not improved by autogenous vaccines.

LOCALIZED GONOCOCCUS INFECTIONS

Any one who has treated a number of cases of gonorrheal vulvovaginitis in children realizes how difficult, prolonged and unsatisfactory the treatment is apt to be. The ordinary procedures — daily douches of mercuric chlorid or compound solution of cresol followed by swabbing the entire surface of mucous membrane with 25 per cent. argyrol or 1 to 2 per cent. silver nitrate solution, or, if the child is not too small, insufflations of protargol powder into the vagina after the method of Dr. Robert S. Walker, a method which should be more generally used — have been followed in my hands by bacteria-absent smears only after prolonged treatment. The use of a polyvalent vaccine, grown for some time on artificial mediums, has seemed materially to shorten the disease.

Vaccines prepared from freshly isolated strains of gonococci do not seem to give so good results as older strains and there appears to be no advantage gained from the use of an autogenous vaccine. The good results obtained by Butler and Long[16] and by Hamilton and Cook[17] are worthy of mention. Acute cases of gonorrheal

9. Watters, W. H., and Eaton, C. A.: Boston Med. and Surg. Jour., 1909, clx, 508; Med. Rec., 1909, lxxv, 93.
10. Callison, J. G.: Med. Rec., 1911, lxxix, 1129, 1161; Post-Graduate, 1911, xxvi, 718; Am. Jour. Med. Sc., 1912, cxliv, 350.
11. Elliott, J. B.: South. Med. Assn.; abstr. in THE JOURNAL A. M. A., Dec. 2, 1911, p. 1861.
12. Leishman, W. B.: Glasgow Med. Jour., 1912, lxxvii, 401; abstr. in THE JOURNAL A. M. A., July 27, 1912, p. 311.
13. Meakins, J. C., and Foster, L. S.: Canadian Med. Assn. Jour., 1911, i, 496.
14. Smallman: Jour. Royal Army Med. Corps, 1909, xii, 136.
15. Stone, W. J.: The Treatment of Typhoid Bacillus Carriers, THE JOURNAL A. M. A., Nov. 12, 1910, p. 1708; Am. Jour. Med. Sc., April, 1912.
16. Butler, W. J., and Long, J. P.: The Vaccine Treatment of Gonorrheal Vulvovaginitis in Children, THE JOURNAL A. M. A., March 7, 1908, p. 744.
17. Hamilton, A., and Cook, J. M.: Jour. Infect. Dis., 1908, ii, 158.

vulvovaginitis improve more rapidly as a rule under vaccine than those which receive the ordinary routine treatment. The best effects are to be expected in chronic cases. The opsonic index is not essential to treatment. I have treated several patients with gonorrheal inguinal adenitis by the injection of a polyvalent vaccine. One patient has been operated on twice for suppurating glands and part of them were removed each time. The remaining glands had subsequently become indurated and enlarged, and discharged a secretion, cultures from which showed a secondary infection with *Staphylococcus aureus*. A combination vaccine was used; the glands were much reduced in size after four injections and absent after six. In two other patients, the glands were enlarged to egg size, but were much reduced and the discharge absent after six to eight inoculations.

The dose of vaccine depends on the amount of the clinical reaction obtained. In gonorrheal arthritis this reaction consists of slight rise of temperature and malaise with increased tenderness and pain in the affected joints, lasting from six to twenty-four hours after an injection. The best results are apparently obtained when the dose is large enough to produce a slight reaction. I have rarely exceeded 25 millions with the strains making up my vaccine, but Cole and Meakins[18] have used from 300 millions to 1,200 millions in gonorrheal arthritis, while Irons[19] has used 20 millions to 500 millions.

LOCALIZED INFECTIONS WITH B. COLI COMMUNIS

I have treated about twenty infections following appendicitis due to the colon bacillus, in which the wound area was soiled, either at the time of operation through the rupture of an adherent fragile appendix or previously. Each of the patients was discharged with the wound healed on an average three and one-half weeks after operation. The purulent discharge was in each case profuse, but was lessened after the second or third inoculation with a vaccine prepared from the patient's organisms and begun as soon as possible after the pus appeared. The dose varied from 30 to 50 millions every third day. The average stay of twenty-five cases with wound infection treated in the same institution and under similar conditions, but without vaccine, was approximately six weeks as contrasted with three and one-half weeks for the twenty patients treated with vaccine.

The success of the treatment in one patient is worthy of mention. He had been operated on for appendical abscess eight weeks previously in a distant city. Following the operation there was a purulent discharge for six weeks; then the wound closed and the patient was allowed to leave the hospital. A few weeks afterward the wound opened. At this time pus and gas were discharged from the wound. A small perforation of the bowel at the bottom of the wound had taken place, and the patient was thoroughly septic. Pus also appeared in the urine, due to bladder infection from the abscess, and the bowel evacuations contained pus. A pure culture of the colon bacillus was obtained from the wound. An autogenous vaccine was made and an inoculation given every three to four days. After the second inoculation, the pus was diminished in the urine and from the wound. After three inoculations the wound was surgically clean; gas was no longer discharged and the wound soon healed. In all, four inoculations were given and the patient has remained well.

In cystitis due to the colon bacillus, so common in women, the results in many instances have been gratifying. One case cleared up after two inoculations. The patient had previously been treated by bladder irrigations and instillations, with little improvement during four weeks. In one patient with a fecal fistula following a lateral ileocolonic anastomosis, in which an autogenous colon vaccine was used, the results were not satisfactory. The leaking point in the bowel was so large as constantly to allow reinfection. In two cases of acute rectal fistula a colon vaccine was used with good results.

The result in one recent instance of pyelitis of pregnancy, due to the colon bacillus, is worthy of mention. At about the fifth month, this patient began to pass large quantities of pus and blood with the urine. The temperature ranged from 101 to 103 F. with occasional chills, which condition had persisted for about one month and was not amenable to any form of treatment by the attending physician. After the second dose of an autogenous vaccine, the temperature dropped by crisis to normal and so remained. In all ten or twelve doses were given. Varying quantities of pus persisted for several weeks thereafter, but the patient's general condition so much improved that she was delivered at term of a healthy child.

LOCALIZED PNEUMOCOCCUS INFECTIONS

In a self-limited acute disease like pneumonia, it does not appear that much can be accomplished by specific bacterial treatment. In "unresolved" pneumonia the use of a vaccine may be followed by good results. Patients with pneumonic empyema pleurae usually promptly recover with drainage, many of them by aspiration, but if complicated by secondary infection an appropriate vaccine will shorten the period of suppuration. In one patient with chronic frontal sinusitis and chronic empyema of the antrum, due to the *Micrococcus tetragenus* and the pneumococcus, in which an autogenous vaccine was used, the result was good after prolonged treatment.

In long-standing infections of this nature the lining of the cavities has become so altered through the formation of granulation tissue low in vitality, the so-called "pyogenic membrane," that it is difficult to bring to the area involved a sufficient amount of opsonin-containing blood. Likewise, in septic sinuses leading from a portion of necrotic bone, while the condition may be improved and the discharge of pus lessened through the use of a bacterial vaccine, little more than an amelioration of the symptoms may be expected until the necrotic bone is removed.

LOCALIZED STREPTOCOCCUS INFECTIONS

In tonsillitis and the adjacent adenitis, due to the streptococcus, good results may be expected from the use of a stock streptococcus vaccine. Likewise in infected sinuses leading from joints or bone, due to the streptococcus, good results may be expected providing free drainage and fresh blood-supply are secured. In the treatment of certain postscarlatinal complications, such as periostitis or localized abscesses due to streptococcus, the use of an autogenous vaccine is indicated. In erysipelas the results with stock streptococcus vaccine have been satisfactory when combined with local applications of a saturated solution of magnesium sulphate.

THE USE OF BACTERIAL PRODUCTS FOR DIAGNOSIS

An injection of gonococcic vaccine will often differentiate a gonorrheal joint from gout, rheumatic arthritis or tuberculosis. In a gonorrheal joint the pain, tenderness and redness are increased during the height of the

18. Cole, R. I., and Meakins, J. C.: Bull. Johns Hopkins Hosp., 1907, xviii, 223.
19. Irons, E. E.: Jour. Infect. Dis., 1908, iii, 279.

reaction, if the vaccine is potent and the dosage sufficient. On the other hand, excessive dosage is to be avoided, for what has been mentioned above in connection with tuberculin as detrimental to the interests of the patient and to the method, holds good in connection with any of the bacterial products. I have, on numerous occasions, seen an epididymitis follow so closely a large dose of gonococcus vaccine as to leave no doubt as to its cause.

In tuberculosis it is now generally conceded that the cutaneous reaction of von Pirquet, the reaction of Moro, the intradermal reaction of Mantoux and Moussu, the ophthalmic reaction of Calmette and the older method of subcutaneous injection have all been of value in diagnosis. My own preference in any doubtful condition has been for the subcutaneous injection of 1 mg. Old Tuberculin with the patient in bed, and to watch for subsequent auscultatory changes and fever. If no reaction occurs in two or three days, 5 mg. are injected and the focal symptoms watched as before. A third injection of 10 mg. may be given if necessary. One can assert, however, with considerable positiveness, if no focal or general symptoms follow the injection of 5 mg., that the patient has not an active tuberculosis.

A negative von Pirquet skin test is also of value in excluding a latent tuberculosis, although a positive reaction may not indicate that the process under consideration is then active. A positive reaction may only indicate that the individual has at some time had an active tuberculosis. It is true, on the other hand, that in active tuberculosis the reaction is often more intense than in the latent non-active types and as such is often of confirmatory value.

In typhoid fever, despite the statement of von Pirquet that a state of sensitization or allergy does not exist in this disease, Chantemesse[20] has described an ocular diagnostic test. He has used a dilution of the bacterial cellular proteids for instillation. The test has recently been applied by Austrian[21] in seventy-five cases of typhoid with positive results in seventy-one. As a diagnostic method the test gives much promise of usefulness.

Prendergast[22] has recently described a new test for typhoid which consists of the intradermal injection of a small dose, 5 millions, of typhoid vaccine. In the non-typhoid patient there becomes apparent within twenty-four hours an area of redness about the site of the injection, while in the patient with typhoid there is no reaction whatever. Such a test may have a negative if not a positive value.

THE USE OF BACTERIAL PRODUCTS FOR PROPHYLACTIC PURPOSES

To Wright must be given great credit for his pioneer work in the prophylaxis of typhoid fever by means of the injection of typhoid vaccine. The value of this work is just being appreciated. The results of such prophylaxis in the British, German and American armies are convincing. But the use of typhoid vaccine should be more general. In institutions where sporadic or endemic typhoid may arise, the well inhabitants should be immunized. This is particularly necessary in general hospitals where examples of contact infection among nurses, orderlies and physicians are common. In many large hospitals, all nurses, orderlies and interns are now immunized on beginning their service. Other progressive institutions should follow the example. It is to be hoped that as a means of furthering their sphere of usefulness, municipal boards of health will offer free immunization to all who apply. The cost will be small and the results will have great prophylactic and educational value. This will be especially worth while in localities where the disease is more or less constantly endemic. The immunity lasts from three to six years, possibly longer.

The recent studies of Sophian and Black[23] in prophylactic immunization against epidemic meningitis are worthy of special mention. They have been able to demonstrate increased agglutinins, from 1 in 200 to 1 in 1,500, in the patients' serum, after three injections of the vaccine; while immune bodies could be demonstrated by complement fixation as early as the fourth day after the first injection. The highest fixation was obtained in dilution 1 in 250 and occurred about three weeks after the beginning of vaccination. Three injections appeared to give the desired results; the first dose of 500 millions, the second and third of 1,000 millions each at weekly intervals. Some local and general reaction follows the injections but most of the symptoms have disappeared in from twenty-four to thirty hours. The immunity lasts at least one year.

Since epidemic meningitis is transmitted largely by healthy carriers of the meningococcus, vaccination of those who have been exposed and who themselves may be "contact carriers" becomes a matter of importance. The number of healthy carriers in an epidemic is much greater than the number who may be ill with the disease, but of course one can never be certain that a temporarily lowered resistance may not render the carrier susceptible. It would seem best, therefore, to vaccinate all exposed to the disease during an epidemic, especially those in whose families the disease has occurred as well as nurses, orderlies and physicians.

In scarlet fever we have attempted to immunize those exposed to the disease by means of a stock streptococcus vaccine. While we have had no instances of subsequent infection there are several factors which serve as argument against its use. The streptococcus has not been definitely shown to be the causative organism in the disease and if it were, the short period of incubation would probably leave insufficient time for immunization by vaccines.

20. Chantemesse, A.: Deutsch. med. Wchnschr., 1907, xxxiii, 1572.
21. Austrian, C. R.: Bull. Johns Hopkins Hosp., 1912, xxiii, No. 251.
22. Prendergast, F. A.: Med. Rec., Dec. 30, 1911.

23. Sophian, Abraham, and Black, J.: Prophylactic Vaccination Against Epidemic Meningitis, THE JOURNAL A. M. A., Aug. 17, 1912, p. 527.

PLEURAL EFFUSION DUE TO ARTIFICIAL PNEUMOTHORAX

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In a paper on the complications of artificial pneumothorax, Weiss[1] estimates that in about 50 per cent. of the cases an effusion develops on the treated side. In spite of this frequency there appear to be comparatively few American articles dealing with this subject, judging from the abstracted and complete papers which I have read.

Harris[2] records two cases, one occurring during the course of treatment, the other five months after discontinuing treatment. Pleurisy with effusion is reported

1. Weiss, A.: Complications Liable in Treatment with Artificial Pneumothorax, Beitr. z. Klin. d. Tuberk. xxiv, 333; abstr., THE JOURNAL A. M. A., Nov. 9, 1912, p. 1752.
2. Harris, S. T.: Treatment of Pulmonary Tuberculosis by Compression of Lung, Jour. Med. Assn. Ga., August, 1912; abstr., THE JOURNAL A. M. A., Aug. 24, 1912, p. 675.

by Hamman and Sloan[3] in two of their cases, but the side affected is not mentioned. Sloan[4] speaks of four cases of pleural effusion occurring in six cases of artificial pneumothorax progressing favorably. Undoubtedly, the great majority of these effusions are insignificant in character. At times they pass unrecognized till they are revealed by the *x*-ray.

As this subject is fully treated in the article by Weiss,[1] I shall refer but briefly to our experiences at the Phipps Institute.

Here seven patients, all with far advanced cases, have received artificial pneumothorax, and of these three have developed effusions on the treated side. The succussion splash was present in all the cases, though none of the patients detected the splash on the first occasion when it was heard by the physician. In one case percussion failed to indicate fluid at the time the succussion splash was first audible. In all three cases the pneumothorax was complete and has remained so till the present, though from four to six weeks have elapsed since the injections were discontinued. In all the cases the quantity of fluid was small, and no appreciable effects were produced. The fluid was recognized from two to three months after institution of treatment, and from four to six weeks after its suspension. The *x*-ray and aspiration were not resorted to in any of the cases. In two the total effect of the treatment has been uncertain; in one case the disease has progressed. Initial injections varying from 250 to 450 c.c. were made; the largest amount given at any one injection was 750 c.c., and the intervals between injections ranged from three to twenty days.

The nitrogen in these cases was injected by Dr. John Speese.

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BENZOL IN THE TREATMENT OF LEUKEMIA

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Benzol (benzene not benzin) has recently been used as a drug in the treatment of leukemia, Von Koranyi[1] being the first one to employ it thus. He was induced to do so, it is said, because of the result of benzol poisoning on girls working in a factory where benzol was used as a solvent for rubber as a cement in the manufacture of tin cans.

Selling[2] reported three cases of poisoning in patients admitted to Johns Hopkins Hospital in 1909, two of whom died and came to autopsy. The patients suffered from purpura hemorrhagica with aplastic anemia and aplastic bone-marrow. In the remarks made on the condition of these patients it was stated that the anemia was aplastic with only slight changes in the appearance of the red cells, except a slight pallor and slight anisocytosis. No regeneration forms of the red cells and no normoblasts were found and only one megaloblast. Platelets were few. There was diminution in the granular type of leukocytes and relative increase in mononuclear types. A leukopenia was also noted.

Koranyi treated a woman aged 32, with enlarged spleen of seven months' duration, who complained of weakness, pain and tenderness in the sternum with a blood-count of reds 3,100,000, whites 220,000, with polynuclears 70 per cent., and myelocytes 16 per cent. Patient received *x*-ray treatments for a period and, Feb. 14, 1912, benzol in the amount of from 3 to 4 gm. per day was given. In April the whites were reduced to 65,000, and by the middle of May to 8,000 with a corresponding improvement in general health. Koranyi states that there were no failures with benzol in chronic leukemia; that the spleen and lymph-nodes were less affected by the remedy; that benzol alone was of benefit, but was more gradual in its effect than *x*-ray, but succeeded where roentgenotherapy fails; that patients who had received *x*-ray treatments responded to benzol medication more readily than those who had not had the *x*-ray treatment. He noticed no serious ill effect. The main disagreeable symptoms noted were a sense of burning in the stomach with the eructation of gasoline-like-tasting fluid, transitional tracheobronchitis and dizziness. He gave the medication in capsules with an equal amount of olive oil.

Koranyi states that he had used benzol also in polycythemia chronica with splenomegaly. At first it seemed to stimulate the bone marrow with resulting increase in the number of red cells from nine to ten millions, but in three weeks the number fell to 6,700,000. The patient then considered himself cured and disappeared.

Selling[2] quotes from Santesson,[3] who experimented on rabbits by injecting benzol subcutaneously and also by wrapping the animals in cloths soaked in benzol. Both procedures produced chronic poisoning with characteristic hemorrhages in pleura, lungs and mucosa of stomach, fatty degeneration of organs and aplastic bone-marrow.

Keralyfi[4] reports seven patients given systematic treatment with benzol. He administered the drug with an equal amount of olive oil in capsules, and the dosage used was from 3 to 4 or even 5 gm. per day. He states that the leukocytes dropped to normal with benzol without *x*-ray treatment. All symptoms subsided. The treatment lasted from three to five months with different patients; the ages of the patients were from 21 to 69 years. He states that the result of the treatment suggests that it may regulate red blood production and be of use in polycythemia chronica. All but one of the seven patients reported were of myeloid type and one of the lymphoid type. In the one patient suffering from lymphatic leukemia the benefit was especially early, the leukocytes dropping from 131,000 to 7,200 in three weeks. A year before this the patient had received twenty *x*-ray exposures, and the leukocytes dropped from 80,000 to 40,000, but the lymph-nodes grew larger under the management.

One patient, a woman, responded to the drug atypically. In three weeks' time with benzol the leukocytes dropped from 140,000 to 100,000. The benzol was stopped, and in five days the leukocytes increased to 290,000. Within ten days from this time the leukocytes had dropped to 65,000 and in fifteen days more to 15,000. All symptoms were improved during the same time. Other reports have been made of equally promising nature.

3. Hamman and Sloan: Induced Pneumothorax in the Treatment of Pulmonary Disease, Report of the Eighth Annual Meeting of the National Association for the Study and Prevention of Tuberculosis.

4. Sloan, M. F.: Discussion to the article referred to in Footnote 3.

1. Von Koranyi, A.: Beeinflussung der Leukämie durch Benzol, Berl. klin. Wchnschr., 1912, xlix, 1857.

2. Selling, L.: Cases of Purpura Hemorrhagica Due to Benzol Poisoning, Bull. Johns Hopkins Hosp., 1910, xxi, 33; abstr., THE JOURNAL A. M. A., March 12, 1910, p. 909.

3. Santesson: Skandin. Arch. f. Physiol., 1900, x, 7.

4. Keralyfi, G.: Wien. klin. Wchnschr., 1912, xxv, 1311.

On the basis of these reports five patients have been treated with benzol in my service in the Presbyterian Hospital, Chicago. Three were men and two women. Four suffered from myelogenous leukemia and one from a rather atypical type of lymphoid leukemia.

All but one of the patients had received *x*-ray treatments. One had suffered from a rather severe *x*-ray burn. The one woman with myeloid leukemia had received but a few treatments with the *x*-ray, and the patient with the lymphoid type had had no previous *x*-ray treatments. Roentgenotherapy was used in connection with the benzol treatment with all of the patients excepting the male who had suffered from *x*-ray burn.

The phenomenal effect of benzol and the importance of the treatment necessitate rather full case-reports, five of which are presented.

CASE 1.—A. M. W., merchant, aged 42, married, first examined Sept. 29, 1910. Progressive loss in strength for past fourteen months, weight declined from 185 to 145 pounds. Patient weak and with very poor endurance. An irritating cough aggravated by variable weather. No expectoration. Profuse night sweats. Some fever with temperature of 100-101 F. at times. Dull ache and weight in left upper abdomen. Two weeks ago very severe pain in upper left abdomen aggravated by breathing. Health always good until present trouble. Appetite now good. Bowels regular.

Examination.—Is pale. General muscular apparatus flabby. Mucous membrane of throat and mouth pale. No lymph-node enlargements. Lungs and heart normal. Pulse rather rapid. Abdomen rather large, tumor in left upper abdomen corresponding to a much-enlarged spleen. Liver edge felt 3 cm. below costal edge at end of deep inspiration, not tender. Patient nervous and apprehensive; a fine tremor of fingers present. Urine: Specific gravity, 1.018; contains no abnormal elements. Blood: Hemoglobin, 46 per cent., Dare; reds 4,200,000, whites 352,000. Differentiation: Small lymphocytes 10 per cent., large lymphocytes 6 per cent., indentate nucleus 2 per cent., myelocytes 10 per cent., polynuclears 70 per cent., polynuclear eosinophils 2 per cent.

Treatment and Result.—Patient was sent to the Presbyterian Hospital where he received *x*-ray treatments and practically absolute rest in bed in a sunny room. Under this management there was rapid improvement in the patient's condition, a gain in weight, hemoglobin increased in percentage and the whites rapidly diminished in number. Nov. 10, 1910, total leukocytes were 30,000; December 30 the total leukocytes were 7,600 and showed 2 per cent. of myelocytes. The spleen diminished rapidly in size. Just before the holidays of 1910 the patient went to California where he received *x*-ray treatments with some regularity, but was rather active physically and not quite satisfied with his surroundings. He returned within a month and the leukocyte count was 82,500 and the spleen palpable and projected from 3 to 5 cm. below the costal edge. Hemoglobin from 85 to 90 per cent., Dare. Patient remained in Chicago, but not at the hospital, receiving regular *x*-ray treatments, and attended to some business affairs. His general nutrition remained good, but he was excessively nervous, the former nervousness apparently aggravated by a railroad accident which occurred on his way from California to Chicago. Sept. 8, 1911, the red count and hemoglobin were practically normal, whites 13,400, myelocytes 20 per cent., of which 3 per cent. were eosinophils, polynuclears 66 per cent., of which 2 per cent. were eosinophils, lymphocytes small 10 per cent., large 6 per cent. During the remainder of 1911 the patient's condition remained about the same, the leukocytes never returning to normal count and myelocytes always present. The spleen remained just palpable. March 20, 1912, the leukocytes had increased to 100,000 of which about 10 per cent. were myelocytes. At about this time the patient was seized with a peculiar sensation in the lower chest and abdomen while taking a warm bath. He became very much frightened and collapsed. Following this there was some soreness over the spleen. The patient continued to receive *x*-ray treatments with some regularity, always with care as to the dosage, but on May 4, 1912, an *x*-ray burn of the skin over the spleen occurred, was painful and necrosis of skin occurred leaving an ulcer about as large as the palm of an ordinary hand. This aggravated the patient's general nervousness and, of course, necessitated the withdrawal of the *x*-ray treatments. The ulcer was finally healed by a surgical plastic operation. During this period without *x*-ray treatments the leukocytes rose in number, reaching a total, October 12, of 191,000, of which there was always a considerable number of myelocytes. Oct. 28, 1912, benzol medication was begun in the dose of 5 minims three times a day, and this was gradually increased so that by November 12 he was taking 15 minims four times a day. There was at first a slight rise in the number of leukocytes, and then after a few days a gradual diminution. November 21 the total leukocytes were 167,000. November 30 the whole blood-count was: reds 4,100,000, hemoglobin 68 per cent., leukocytes 133,000. December 12, reds 4,100,000, hemoglobin 75 per cent., leukocytes 18,250, and three days later the whites had fallen to 12,500, the small lymphocytes 7 per cent., large 2 per cent., indentate nucleus 4 per cent., polynuclears 86 per cent., of which 6 per cent. were eosinophils, myelocytes 3 per cent. December 29, reds 4,680,000, hemoglobin 72 to 75 per cent., leukocytes 7,500, small mononuclears 18 per cent., large mononuclears 3 per cent., polynuclears 79 per cent., myelocytes none. The benzol was stopped December 22. Jan. 7, 1913, reds 4,960,000, hemoglobin from 85 to 90 per cent., leukocytes 3,600, small lymphocytes 12 per cent., large lymphocytes 7 per cent., indentate nucleus 1 per cent., polymorphonuclears 80 per cent. of which 2 per cent. were eosinophils and 3 per cent. basophils.

Case 1 deserves special mention because of the relapse after rather phenomenal improvement under *x*-ray treatment. The patient's general health became very poor while suffering from the *x*-ray burn. At the beginning of the benzol treatment he had approximately 200,000 leukocytes, with a rather large percentage of myelocytes. His spleen had not been palpable for months. Under the use of the benzol, as noticed in the case report, the leukocytes melted away, and three weeks after the drug had been withdrawn the fall continued and reached the low count of 3,600, with no myelocytes. With the great drop in the whites, the red cells amounted to about 5,000,000 and the hemoglobin from 85 to 90 per cent., so that while there was a destruction and removal from the peripheral circulation of the leukocytes, both reds and hemoglobin improved. There was a corresponding improvement in the patient's general condition; a gain in weight of 5 pounds, a feeling of well-being and lessened nervousness, especially of the tremor from which he had suffered during his whole illness.

CASE 2.—J. G., druggist, aged 36, married, presented himself for examination, April 23, 1912. Weakness which began about ten months before had gradually increased. There had been a loss of weight from 166 to 150 pounds. Fulness and dragging in upper left abdomen had been noticed for six or eight months and recognized as large spleen three months before patient was seen. Some edema of feet had existed during the last few days, and night sweats at times. Aching pains in the long bones and sternum were noticed a year ago. Appetite was variable, and digestion good. Patient slept well. He had had the deep intramuscular injection of iron and arsenic and six or seven *x*-ray treatments over spleen during last few months. He had always had good health. One niece suffers from pseudoleukemia. Patient has good habits. He gave the following counts as made before coming to Chicago: March 6, 1912, hemoglobin, 30 per cent., reds 3,280,000, whites 552,000. At a later time in March hemoglobin 40 per cent., reds 3,750,000, whites 575,000. April 23, hemoglobin 40 per cent., reds 3,500,000, whites 415,000.

Examination.—Appearance pale. Mucous membrane of mouth and throat pale. Tonsils slightly enlarged. No enlargements of lymph-nodes. Spleen enormously enlarged, with lower border resting on crest of ilium, the right border extending beyond

the median line. Urine: Specific gravity 1.015, acid, no albumin, sugar or casts. Liver easily palpable, slightly tender. Sexual organs negative.

Blood Examination: Hemoglobin 40 per cent., Dare; reds 3,500,000, whites 578,000; differentiation: polynuclears 44 per cent., of which 6 per cent. were eosinophils; small lymphocytes 18 per cent., large lymphocytes 6 per cent., myelocytes 32 per cent., of which a very large percentage were eosinophils.

Treatment and Results.—Patient was sent to the Presbyterian Hospital where he has remained, receiving *x*-ray treatments from two to three times a week. There was gradual but slow diminution in the number of leukocytes and in the size of the spleen. June 5, 1912, the red cells were 3,860,000, hemoglobin 63 per cent., leukocytes 275,000, of which 24 per cent. were myelocytes. September 24 the leukocytes had fallen to 86,000 and the spleen was about half its original size. Oct. 30, 1912, the leukocytes had increased to 143,000. Benzol treatment was begun at this date and on November 6 the total leukocyte count was 201,000. Then there was a gradual fall in the leukocytes, December 24, to 85,000, with a decrease in the number of myelocytes. December 30, the leukocytes had fallen to 40,000.

CASE 3.—J. L. B., farmer aged 52, married, was admitted to Presbyterian Hospital, June 18, 1912. Patient says that he has not been well for three or four years; has not been quite so strong as normal and has tired easily, with occasionally vertigo and headache. Since September, 1911, these symptoms have been worse with a gradual loss in weight. Nov. 12, 1912, he had an attack of nausea with violent bloody vomiting and pain in abdomen. The next day he noticed black stools. The gums bled easily. Patient had slight cough, dyspnea on exertion and edema of feet which disappeared at night. He noticed enlargement of abdomen and tenderness in upper left abdomen and at the sternum for a long time. He says he was never ill before.

Examination.—Face pale, general nutrition poor, muscles flabby, mucous membrane of mouth pale, throat normal, no enlargement of lymph-nodes, lungs and heart normal, spleen enormously enlarged, lower border resting on crest of ilium and right border extending to median line. Liver just palpable at end of deep inspiration; not tender. Blood: Hemoglobin 30 per cent., Dare; reds 2,360,000, whites 640,000; differentiation: small lymphocytes 12 per cent., large lymphocytes 24 per cent., indentate nucleus 2 per cent., myelocytes 33 per cent., of which 8 per cent. were eosinophils, polynuclears 29 per cent., of which 4 per cent. were basophils. Urine: 1,450 c.c. in twenty-four hours; specific gravity, 1.018; few hyalin casts and uric acid crystals.

Treatment and Result.—Patient received *x*-ray treatments two or three times a week with regularity. July 14, hemoglobin was 46 per cent., total leukocyte count 370,000, and spleen slightly smaller. August 27, reds were 4,820,000, hemoglobin 78 per cent., whites 118,000. Sept. 11, 1912, total leukocytes were 28,000; October 6, 47,000. Then came a standstill in leukocytes; November 17, benzol treatment was begun with 7 minims three times a day, after a short period increased to 15 minims four times a day. The leukocytes gradually diminished in number, and December 17 the red cells were 4,600,000, hemoglobin 72 per cent., total leukocytes 15,700, of which 11 per cent. were myelocytes. December 30, leukocytes were 13,500. Myelocytes still further diminished in percentage. Jan. 9, 1913, reds 4,000,000, hemoglobin 76 per cent., Dare; whites 9,800; differentiation: small lymphocytes 10 per cent., large 6 per cent., indentate nucleus 2 per cent., degenerated myelocytes 6 per cent., polynuclears 76 per cent., 2 per cent. of which were of polynuclear and 1 per cent. of myelocytic type.

Cases 2 and 3 require no special mention except for the fact that both patients had *x*-ray treatment for months with progressive improvement in the blood-picture and also that there was diminution in size of the spleen; but this was slow and finally came to a stand. Under the use of both *x*-ray and of benzol the improvement became much more rapid, with corresponding improvement in general health.

CASE 4.—MRS. F. A., aged 28, secundipara, Russian, was admitted to Presbyterian Hospital, Oct. 21, 1912. Illness began eight months before with weakness, lessened endurance, dizziness, dyspnea on exertion, and nervousness; these symptoms became progressively worse until the patient was obliged to give up work about ten weeks before admission. At that time a mass was noticed in upper left abdomen which caused a sense of dragging and weight; slight edema of ankles occurred at this time which disappeared at night. On admission patient complained of same symptoms with addition of fainting attacks, palpitation of heart, cramp in abdomen and constipation. Menstruation regular.

Examination.—Patient very nervous, skin and mucous membranes pale, no lymph-node enlargements. Heart and lungs normal. Whole left abdomen filled by spleen, extending beyond the middle line on right. Liver palpable at end of inspiration; slightly tender. Pelvic organs normal. Urine normal. Blood: Hemoglobin 50 per cent., Dare; reds 2,840,000, leukocytes 680,000, of which 36 per cent. were myelocytes.

Treatment and Results.—Patient was placed at rest on *x*-ray treatment three times a week. November 7, total leukocytes 476,000. November 13, hemoglobin 50 per cent., total leukocytes 546,000. At this time benzol treatment was begun in the dose of 15 minims four times a day, and November 19 the leukocytes had increased to 780,000; November 22, 600,000; December 2, 290,000; December 17, 46,000, at which time there were 9 per cent. of myelocytes. December 26, reds 4,500,000, hemoglobin 56 per cent., Dare; leukocytes 10,700; myelocytes had entirely disappeared. January 5, reds 4,100,000, hemoglobin 60 per cent., leukocytes 8,500, with normal differentiation.

Case 4 deserves special mention because of the phenomenal effect of the treatment. The patient had had two or three *x*-ray treatments before the benzol was begun; it was first used in a dosage of 0.5 gm. four times a day, then increased to 1 gm. four times a day. The first effect, which was produced within six days, was to increase the number of leukocytes from 546,000 to 780,000. Three days later the count had fallen to 600,000; December 2, to 290,000; December 17 to 46,000, and January 5, the last examination, to 8,500. In less than two months of roentgenotherapy and benzol treatment, the blood-picture had returned almost to normal, and the myelocytes which were found in the blood with high percentage disappeared. The spleen, which was very large in the beginning, was just palpable on the last date. There was a corresponding general improvement in the patient's condition.

CASE 5.—MRS. B. H., aged 41, secundipara, German, was admitted to Presbyterian Hospital, Dec. 5, 1912. In June, 1912, the patient began to have pain in the abdomen in the form of cramps, and heaviness in upper left abdomen; soon after this a mass was discovered in that region. This caused a sense of dragging and soreness which was aggravated by walking. The appetite was poor. Weakness gradually increased; weight declined from 135 to 117 pounds. On admission the patient complained of heaviness, fulness, pressure and tenderness in left upper abdomen, and that there was a tumor there. She was weak, had dyspnea on exertion, palpitation of heart, no appetite, constipation, amenorrhea of six weeks' duration and a rather profuse leukorrhea. Thirteen years ago at birth of last child, patient suffered from laceration of the perineum and neck of uterus which was repaired, but had suffered from leukorrhea since that time. Otherwise patient had been healthy.

Examination.—Mucous membranes pale; skin rather dark from a diffuse pigmentation. Slight enlargement of lymph-nodes in the posterior triangles of neck, axillary region, supratrochlear and in groins. Heart and lungs normal. Spleen, right border almost to middle line, lower border to iliac crest. Liver moderately enlarged and slightly tender. Pelvis: uterus retrodisplaced and movable; appendages seem normal; slight laceration of cervix uteri. Urine: Specimen normal and later examinations of twenty-four-hour collections normal. Blood: reds 4,500,000, hemoglobin 66 per cent., total leukocytes 45,000,

of which 61 per cent. were small lymphocytes, 6 per cent. large lymphocytes, 34 per cent. polynuclears, no myelocytes and no eosinophils.

Treatment and Results.—Benzol and Roentgen treatment were begun at once, and December 9 the total leukocytes were 19,000. December 18, reds were 4,420,000, hemoglobin 58 per cent., total leukocytes 5,800, giving practically the same differentiation. December 26, leukocytes 6,000, small mononuclears 35 per cent., large 21 per cent., polynuclears 41 per cent., with 6 per cent. of eosinophils; indentate nucleus 1 per cent. January 5 the leukocytes were 5,900, hemoglobin 68 per cent., reds 4,120,000.

Case 5 deserves special mention. The blood-picture was that of lymphoid leukemia, but the lymph-nodes were not large. The spleen was very large. With *x*-ray and benzol treatment the leukocyte count of 45,000 dropped to 19,000 in three days, then to 5,800 in six days. The benzol was continued experimentally, and January 5, about one month after beginning the treatment, the blood-count was: hemoglobin 68 per cent., reds 4,120,000, leukocytes 5,900, of which there were small lymphocytes 35 per cent., large lymphocytes 9 per cent. and polynuclears 56 per cent. During the treatment the red cells and hemoglobin remained the same as at the beginning. The spleen rapidly diminished to not more than one-fourth the original bulk, and the small lymph-nodes disappeared. There was a marked improvement in the general condition of the patient.

GENERAL REMARKS

The benzol was usually given in gelatin capsules filled at the time of administration. One patient took the drug in an emulsion, made up by the hospital druggist, of which two teaspoonfuls equalled 15 minims of benzol. The drug was given soon after meals and at bedtime. The beginning was 7 minims, which was soon increased to 15 minims. All patients complained of eructation of gas tasting and smelling of benzol. Burning in the stomach was a common symptom. Dizziness was a complaint of two patients. One patient left the hospital to live with a sister in Chicago, and misunderstanding the order for the medicine, increased the daily dosage to 160 minims. Within a few days he suffered from a severe toxic erythema and pruritus of the skin of the whole trunk and exteremities. The drug was discontinued and within one week the erythema disappeared. On resuming the benzol in the dose of 60 minims per day there was no further trouble. As a rule the appetite was not disturbed, with one exception, and in this patient (Case 3) the general nutrition remained good. Of the other four, all gained in weight. No other medicine was given except the necessary laxative or occasionally the mixture of rhubarb and soda as a stomachic. As a rule the patients were kept at rest. The benzol used was that obtained by the hospital druggist, and no analysis was made of it for the presence of nitrobenzol or anilin. The urine of the patients was not examined for nitrobenzol or anilin. The urine did not contain a perceptible, notable increase of uric acid during the rapid leukocytic destruction, nor was there any perceptible general disturbance coincident with the destruction of the enormous number of leukocytes in so short a period.

The chief notable results of the benzol medication were the following:

1. In two patients a marked rise in the leukocytic count for a few days. In three patients this was not observed.

2. A rapid fall in the number of leukocytes, most marked in Cases 1, 4 and 5, in which it resulted in leukopenia.

3. A correspondingly rapid diminution in the size of the spleen, much more rapid than with *x*-ray exposures alone.

4. An improvement of the red-cell count and hemoglobin in all of the myelogenous types.

5. A rapid disappearance of the small though multiple lymph-nodes in the patient with lymphoid leukemia. With this patient the hemoglobin and red-cell count remained the same during the treatment.

6. Stained specimens of blood showed early and increasing degenerated leukocytes, especially of all mononuclear types, including the lymphocytes and myelocytes. This was manifested by basophilic granular degeneration of lymphocytes and by deformed myelocytes containing large dark granules with the Wright stain. The polynuclear cells showed the degenerative changes, but even these showed examples of large, loose, dark granules. In fact, degenerated forms were so numerous that it was difficult and sometimes impossible to arrive at a leukocytic formula. The blood-picture is new and confusing.

7. In spite of the moderately disagreeable effect of the drug on the stomach, there was a notable improvement in the general condition of all the patients. Inasmuch as *x*-ray treatment had been applied in all but one and was continued during the benzol treatment in all but one, the experience with these patients does not enable one to testify as to the result of benzol alone in the treatment of leukemia.

From the reports made by von Koranyi and others, and from the results noted in this series of patients, it seems justifiable to conclude that benzol in the doses given may at first stimulate the bone-marrow, but very soon the effect is to make the leukocytic marrow hypoplastic. It also seems to render the erythrocytic marrow hyperplastic. This may seem paradoxical, but is apparent clinically.

One is impressed with the drug as a powerful agent—a two-edged sword, which is apparently a remedy of great promise in leukemia, but which used carelessly may defeat the purpose of its use and produce an equally serious condition, namely, aplastic grave anemia, hypoplastic bone-marrow and a fatal termination.

Selling[2] states that impure benzol contains nitrobenzol and other products (anilin, etc.), and that anilin is the probable toxic substance producing purpura hemorrhagica, aplastic anemia, etc.

It would therefore be best to use only pure benzol and to watch its effect by frequent examinations of the patient and the blood. It would also seem wise to err on the side of overcautiousness in size of doses and length of time of use of the drug at any one period, rather than to overuse it with a possible resulting hypoplastic bone-marrow and aplastic anemia.

It may prove a most valuable drug to both physician and patient, especially if it is potent without the use of the *x*-ray.

This report is made now with the hope that others may make use of benzol in leukemia and thus add to the clinical proof of its work

122 South Michigan Boulevard.

Why Think When You Can Know?—Jenner introduced immunity by vaccination and in presenting his subject said that he thought certain hypotheses to be correct. Hunter wrote to Jenner and said, "Why think? Try it on a hedgehog and know."—Mayo in *Boston Med. and Surg. Jour.*

THE EMETIC ACTION OF THE DIGITALIS BODIES *

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Emesis has long been recognized as one of the most annoying of the side actions of the digitalis bodies, and this effect is almost universally attributed to a direct irritant action on the gastric mucous membrane. We have recently shown,[1] however, that this wide-spread belief has no support in direct experimental evidence with therapeutic doses, but that the emesis following the use of amounts comparable to those used clinically is due almost entirely to a direct action on the vomiting center in the medulla.

In the present investigation we have compared the relative emetic and cardiac activities of certain of the more commonly used digitalis bodies, including digitalis, crystalline digitoxin, true digitalin (not German digitalin), strophanthus, amorphous strophanthin, ouabain (so-called crystalline strophanthin), squill, convallaria, apocynum, adonis, digalen, digipuratum, digitalysatum and the fat-free tincture of digitalis.

Single small doses of the drug were injected intravenously from a hypodermic syringe, or small successive portions were injected at short intervals of time until emesis occurred, or until the experiment was abandoned.

The amount thus required to cause emesis was compared to the known fatal dose, or, in many cases, the fatal dose was determined for the animal used in the experiment.

The protocol of an experiment will serve to illustrate the method.

Sept. 23, 1912, male cat, wt. 2.88 kg.
2:13 p. m., 15 mg. convallaria per kg. intravenously.
2:22 p. m., 5 mg. convallaria per kg. intravenously.
2:32 p. m., nausea.
2:36 p. m., emesis.
2:42 p. m., anesthetized; cannula into femoral vein; continuous injection of convallaria in normal saline.
2:54 p. m., convulsions; death. 15.9 mg. per kg. 20 + 15.9 = 35.9 mg. the fatal dose.

Since the animal required 20 mg. of convallaria to cause emesis, and 35.9 mg. to cause death, it follows that the emetic dose was 55 per cent. of the fatal.

NON-PROPRIETARY DIGITALIS BODIES

The results obtained with the non-proprietary digitalis bodies are given in Table 1.

Reference to the table shows that in one instance more than 100 per cent. of the *average* fatal dose was administered without causing nausea or emesis, or the death of the animal, this animal being obviously tolerant toward the drug both with reference to the emetic and cardiac effects.

DISCUSSION OF THE TABULATED RESULTS

The experiments with ouabain came first in chronologic order, and it will be observed that the frequent failure to induce emesis was due to the use of small doses in many cases; but fatal doses also failed to induce emesis in two experiments with this agent.

Forty-two of the sixty-one animals which received more than 30 per cent. of the fatal dose vomited.

The smallest dose of any drug which was followed by emesis was about 20 per cent. of the fatal dose, in the case of true digitalin. We were inclined to think that this was to be attributed to the susceptibility of the animal used in that experiment, but repeated experiments proved conclusively that true digitalin has a very high comparative emetic activity.

TABLE 1.—THE RELATIVE EMETIC AND CARDIAC ACTIVITIES OF DIGITALIS BODIES

Drug	Dose Administered in Percentage of Fatal Dose	Emesis
Digitalis	27	0
	31*	+
	34	0
	35*	+
	36*	+
	37	0 ‡
	39*	+
	45*	+
	47*	+
	48	0
	52	+
	70	0
	80	+
Crystalline digitoxin	28*	0
	40*	+
	42	+
	42	+
	57	+
	57	+
	57	+
	60	+
	71*	+
	100†	+
True digitalin (not the German)	10	0
	18*	+
	20	+
	21*	+
	30	+
	40†	+
Strophanthus	27*	+
	40	+
	50	+
	60	+
	60	+
	100*	0
Amorphous strophanthin	30	0
	35	0
	35	0
	35	0
	40	0
	45	0
	50	0
	61*	+
	69*	+
	71	0
Ouabain (so-called crystalline g-strophanthin)	25	0
	30	0
	30	0
	30	0
	30	0
	30	+
	30	+
	40	0
	40	0
	40	0
	40	+
	40	+
	45	0
	45	0
	50	0
	50	+
	50	+
	60	+
	70	+
	70	+
	100*†	+
	100*	0
	100*	0
Squill (fluidextract)	15	0
(fluidextract)	20	0
(fluidextract)	25	0
	30	0
(freshly made infusion)	66*	+
(freshly made infusion)	84*	+
(freshly made infusion)	84*†	+
Convallaria (fluidextract)	55*	+
	68*	+
	96*	+
	133*	0
	133*	0 §
Apocynum (fluidextract)	40	0
	69	0
	88*	+
	89*	+
Adonis vernalis (fluidextract)	41	0
	41*	+
	49	+

* The fatal dose was determined for each animal in the experiments marked thus.

† Single doses were administered in these experiments; they are not included in the averages of minimal effective d

‡ Nausea.

§ Nausea with 66 per cent.

* From the Laboratory of Pharmacology of Cornell University Medical College.

1. Hatcher and Eggleston: Jour. Pharm. and Exper. Therap., 1912, iv, 113.

of which 61 per cent. were small lymphocytes, 6 per cent. large lymphocytes, 34 per cent. polynuclears, no myelocytes and no eosinophils.

Treatment and Results.—Benzol and Roentgen treatment were begun at once, and December 9 the total leukocytes were 19,000. December 18, reds were 4,420,000, hemoglobin 58 per cent., total leukocytes 5,800, giving practically the same differentiation. December 26, leukocytes 6,000, small mononuclears 35 per cent., large 21 per cent., polynuclears 41 per cent., with 6 per cent. of eosinophils; indentate nucleus 1 per cent. January 5 the leukocytes were 5,900, hemoglobin 68 per cent., reds 4,120,000.

Case 5 deserves special mention. The blood-picture was that of lymphoid leukemia, but the lymph-nodes were not large. The spleen was very large. With *x*-ray and benzol treatment the leukocyte count of 45,000 dropped to 19,000 in three days, then to 5,800 in six days. The benzol was continued experimentally, and January 5, about one month after beginning the treatment, the blood-count was: hemoglobin 68 per cent., reds 4,120,000, leukocytes 5,900, of which there were small lymphocytes 35 per cent., large lymphocytes 9 per cent. and polynuclears 56 per cent. During the treatment the red cells and hemoglobin remained the same as at the beginning. The spleen rapidly diminished to not more than one-fourth the original bulk, and the small lymph-nodes disappeared. There was a marked improvement in the general condition of the patient.

GENERAL REMARKS

The benzol was usually given in gelatin capsules filled at the time of administration. One patient took the drug in an emulsion, made up by the hospital druggist, of which two teaspoonfuls equalled 15 minims of benzol. The drug was given soon after meals and at bedtime. The beginning was 7 minims, which was soon increased to 15 minims. All patients complained of eructation of gas tasting and smelling of benzol. Burning in the stomach was a common symptom. Dizziness was a complaint of two patients. One patient left the hospital to live with a sister in Chicago, and misunderstanding the order for the medicine, increased the daily dosage to 160 minims. Within a few days he suffered from a severe toxic erythema and pruritus of the skin of the whole trunk and exteremities. The drug was discontinued and within one week the erythema disappeared. On resuming the benzol in the dose of 60 minims per day there was no further trouble. As a rule the appetite was not disturbed, with one exception, and in this patient (Case 3) the general nutrition remained good. Of the other four, all gained in weight. No other medicine was given except the necessary laxative or occasionally the mixture of rhubarb and soda as a stomachic. As a rule the patients were kept at rest. The benzol used was that obtained by the hospital druggist, and no analysis was made of it for the presence of nitrobenzol or anilin. The urine of the patients was not examined for nitrobenzol or anilin. The urine did not contain a perceptible, notable increase of uric acid during the rapid leukocytic destruction, nor was there any perceptible general disturbance coincident with the destruction of the enormous number of leukocytes in so short a period.

The chief notable results of the benzol medication were the following:

1. In two patients a marked rise in the leukocytic count for a few days. In three patients this was not observed.

2. A rapid fall in the number of leukocytes, most marked in Cases 1, 4 and 5, in which it resulted in leukopenia.

3. A correspondingly rapid diminution in the size of the spleen, much more rapid than with *x*-ray exposures alone.

4. An improvement of the red-cell count and hemoglobin in all of the myelogenous types.

5. A rapid disappearance of the small though multiple lymph-nodes in the patient with lymphoid leukemia. With this patient the hemoglobin and red-cell count remained the same during the treatment.

6. Stained specimens of blood showed early and increasing degenerated leukocytes, especially of all mononuclear types, including the lymphocytes and myelocytes. This was manifested by basophilic granular degeneration of lymphocytes and by deformed myelocytes containing large dark granules with the Wright stain. The polynuclear cells showed the degenerative changes, but even these showed examples of large, loose, dark granules. In fact, degenerated forms were so numerous that it was difficult and sometimes impossible to arrive at a leukocytic formula. The blood-picture is new and confusing.

7. In spite of the moderately disagreeable effect of the drug on the stomach, there was a notable improvement in the general condition of all the patients. Inasmuch as *x*-ray treatment had been applied in all but one and was continued during the benzol treatment in all but one, the experience with these patients does not enable one to testify as to the result of benzol alone in the treatment of leukemia.

From the reports made by von Koranyi and others, and from the results noted in this series of patients, it seems justifiable to conclude that benzol in the doses given may at first stimulate the bone-marrow, but very soon the effect is to make the leukocytic marrow hypoplastic. It also seems to render the erythrocytic marrow hyperplastic. This may seem paradoxical, but is apparent clinically.

One is impressed with the drug as a powerful agent—a two-edged sword, which is apparently a remedy of great promise in leukemia, but which used carelessly may defeat the purpose of its use and produce an equally serious condition, namely, aplastic grave anemia, hypoplastic bone-marrow and a fatal termination.

Selling[2] states that impure benzol contains nitrobenzol and other products (anilin, etc.), and that anilin is the probable toxic substance producing purpura hemorrhagica, aplastic anemia, etc.

It would therefore be best to use only pure benzol and to watch its effect by frequent examinations of the patient and the blood. It would also seem wise to err on the side of overcautiousness in size of doses and length of time of use of the drug at any one period, rather than to overuse it with a possible resulting hypoplastic bone-marrow and aplastic anemia.

It may prove a most valuable drug to both physician and patient, especially if it is potent without the use of the *x*-ray.

This report is made now with the hope that others may make use of benzol in leukemia and thus add to the clinical proof of its work

122 South Michigan Boulevard.

Why Think When You Can Know?—Jenner introduced immunity by vaccination and in presenting his subject said that he thought certain hypotheses to be correct. Hunter wrote to Jenner and said, "Why think? Try it on a hedgehog and know."—Mayo in *Boston Med. and Surg. Jour.*

THE EMETIC ACTION OF THE DIGITALIS BODIES *

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Emesis has long been recognized as one of the most annoying of the side actions of the digitalis bodies, and this effect is almost universally attributed to a direct irritant action on the gastric mucous membrane. We have recently shown,[1] however, that this wide-spread belief has no support in direct experimental evidence with therapeutic doses, but that the emesis following the use of amounts comparable to those used clinically is due almost entirely to a direct action on the vomiting center in the medulla.

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Since the animal required 20 mg. of convallaria to cause emesis, and 35.9 mg. to cause death, it follows that the emetic dose was 55 per cent. of the fatal.

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The results obtained with the non-proprietary digitalis bodies are given in Table 1.

Reference to the table shows that in one instance more than 100 per cent. of the *average* fatal dose was administered without causing nausea or emesis, or the death of the animal, this animal being obviously tolerant toward the drug both with reference to the emetic and cardiac effects.

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The experiments with ouabain came first in chronologic order, and it will be observed that the frequent failure to induce emesis was due to the use of small doses in many cases; but fatal doses also failed to induce emesis in two experiments with this agent.

Forty-two of the sixty-one animals which received more than 30 per cent. of the fatal dose vomited.

The smallest dose of any drug which was followed by emesis was about 20 per cent. of the fatal dose, in the case of true digitalin. We were inclined to think that this was to be attributed to the susceptibility of the animal used in that experiment, but repeated experiments proved conclusively that true digitalin has a very high comparative emetic activity.

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	35*	+
	36*	+
	37	0 ‡
	39*	+
	45*	+
	47*	+
	48	0
	52	+
	70	0
	80	+
Crystalline digitoxin	28*	0
	40*	+
	42	+
	42	+
	57	+
	57	+
	57	+
	60	+
	71*	+
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True digitalin (not the German)	10	0
	18*	+
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Strophanthus	27*	+
	40	+
	50	+
	60	+
	60	+
	100*	0
Amorphous strophanthin	30	0
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	35	0
	35	0
	40	0
	45	0
	50	0
	61*	+
	69*	+
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Ouabain (so-called crystalline g-strophanthin)	25	0
	30	0
	30	0
	30	0
	30	0
	30	+
	30	+
	40	0
	40	0
	40	0
	40	+
	40	+
	45	0
	45	0
	50	0
	50	+
	50	+
	60	+
	70	+
	70	+
	100*†	+
	100*	0
	100*	0
Squill (fluidextract)	15	0
(fluidextract)	20	0
(fluidextract)	25	0
	30	0
(freshly made infusion)	66*	+
(freshly made infusion)	84*	+
(freshly made infusion)	84*†	+
Convallaria (fluidextract)	55*	+
	68*	+
	90*	+
	133*	0
	133*	0 §
Apocynum (fluidextract)	40	0
	60	0
	88*	+
	89*	+
Adonis vernalis (fluidextract)	41	0
	41*	+
	49	+

* The fatal dose was determined for each animal in the experiments marked thus.

† Single doses were administered in these experiments, hence they are not included in the averages of minimal effective doses.

‡ Nausea.

§ Nausea with 66 per cent.

* From the Laboratory of Pharmacology of Cornell University Medical College.

1. Hatcher and Eggleston: Jour. Pharm. and Exper. Therap., 1912, iv, 113.

It is remarkable that the drug showing the greatest relative emetic activity is precisely that which has been considered as least disturbing to the stomach,[2] and on the other hand it is hardly less remarkable that squill, which was formerly used as an emetic, and is still used as a nauseant, is among the least actively emetic of the drugs of this group.

There is a striking similarity in the relative emetic activity of such dissimilar bodies as digitalis and ouabain. This is true whether we compare the smallest emetic doses or the averages obtained for the two drugs. Thirty per cent. of the fatal dose of ouabain, and 31 per cent. of digitalis, having proved emetic, while the averages for the two series are 49 and 46 per cent. of the fatal, respectively.

Digitoxin and digitalin appear to be the most constantly emetic members of the group, emesis having occurred in every one of fourteen experiments in which the amount administered exceeded the lowest established emetic dose.

It is of interest that these two are the only principles which are obtained from digitalis in a fairly pure state,

TABLE 2.—SUMMARY OF RESULTS SHOWN IN TABLE 1 WITH DOSES EQUAL TO OR EXCEEDING THE MINIMAL EFFECTIVE FOUND

Drug	Emetic Dose in Percentage of Fatal Dose		Number of Experiments	
	Minimum	Average	Total	Effective Per Cent.
True digitalin	18	22*	5	100
Strophanthus	27	47	6	83
Ouabain	30	49*	22	46
Digitalis	31	46	12	66
Digitoxin, crystalline	40	58	9	100
Adonis vernalis	41	45	3	67
Convallaria	55	73	5	60
Amorphous strophanthin.	61	65	3	67
Squill	66	75	3	100
Apocynum	88	88	2	100

* In each of these series the result of one experiment is omitted in the calculation of averages because the minimal effective emetic dose was not determined in the experiment. (See Table 1, footnote.)

and we have found that digitalis causes emesis in nearly every case in which an appropriate dose is administered; and it is also suggestive that the relative emetic activity of digitalis lies between that of these two constituents.

DIGITALIS SPECIALTIES

If we are correct in believing that small doses of all of the active digitalis principles cause emesis through their direct action on the vomiting center in the medulla, it will be impossible to administer these drugs so as to secure the cardiac action while avoiding that on the vomiting center.

If the claims made for certain specialties are correct with regard to their possessing the cardiac without the emetic action, we must suppose that manufacturers have either succeeded in preparing some new principle, differing widely in action from digitoxin and digitalin, or that they have so combined these principles with other chemicals that they exhibit a highly selective action on the heart.

DIGALEN

Among the more widely used of the digitalis specialties is digalen, which probably consists of impure digitalein.[3]

2. Dixon: Manual of Pharmacology, 1906, p. 170. Pfaff and Jaquet: cited by Cushny, Tr. Mich. Med. Soc., 1894, xviii, 155.
3. Killani: München. med. Wchnschr., 1907, i, 886.

Clinical testimony is conflicting with regard to the claim that digalen is less actively emetic than other preparations of digitalis.

The results of our experiments with digalen are given in Table 3.

The relatively high emetic activity of digalen is unmistakable in whatever light we examine these results.

1. Its greatest relative activity is exceeded by only one of the digitalis bodies (true digitalin) previously discussed, and nausea was induced in one case with an even smaller dose than that which caused emesis.

2. Nausea or emesis occurred in twelve of the sixteen experiments in which more than 20 per cent. of the fatal dose was administered.

3. The average dose required to cause nausea or emesis in the ten experiments in which this amount was determined (not determined in two of the experiments) was 39 per cent. of the fatal; 39 per cent. of the fatal was the average which caused emesis in seven experiments in which actual emesis occurred, this being lower than the average emetic dose of any of the digitalis bodies previously mentioned except true digitalin.

TABLE 3.—THE RELATIVE CARDIAC AND EMETIC ACTIVITIES OF DIGALEN

LIQUID DIGALEN

Dose Administered in Percentage of Fatal Dose*	Emesis	Remarks
15.7	0	
17.8	0	
18.2	0	
22.3	0	Nausea.
30.1	+	
34.0	0	
40.2	+	
43.0	0	Nausea.
44.3	+	
48.9	0	Nausea.
50.0	0	
63.6	+	Minimal emetic dose was not determined in these two experiments.
94.0	+	

DIGALEN TABLETS

28.9	+	
34.7	+	
42.8	+	
55.0	+	
78.6	0	
100.0	0	

* The fatal dose was determined in each experiment in Table 3.

Digalen has much less action on the heart than the manufacturers claim it to have; hence the slighter relative emetic activity reported by certain clinicians is to be explained by the fact that they used relatively smaller doses than they would of digitalis.

DIGIPURATUM

Digipuratum is claimed to be a purified extract of digitalis which contains the therapeutically active principles of digitalis so combined with tannin as to prevent their action on the stomach. It is claimed further that digipuratum is free from digitonin, which is said to be a cause of much of the gastric disturbance following the use of digitalis.

Barker[4] states that the digipuratum of Gottlieb is probably one of the best of the more recent digitalis preparations, being free from the stomach-disturbing digitonin.

The results of our experiments with digipuratum are given in Table 4.

On theoretical grounds it seemed difficult to deny that digipuratum might have certain advantages, but these seemed to us to be more apparent than real. Reference to Kiliani's article[5] shows that Boehm found that when

4. Barker, L. F.: Virginia Med. Semi-Monthly, 1911, xv, 457.
5. Boehm: Cited by Kiliani, Arch. der Pharm., ccxxx, 260.

less than 100 mg. of digitonin was administered to dogs by the mouth for periods of ten days, emesis did not occur, and we have been able to confirm this observation of Boehm's to the extent that we found that very large amounts of digitonin were required by the mouth to cause emesis in cats.

Furthermore, Kiliani states that digitalis contains only the merest traces of digitonin, and the effect of the traces of this substance present in therapeutic doses of digitalis must be wholly negligible.

The results tabulated show that digipuratum ranks among the most actively emetic of the digitalis preparations.

1. Seven of the nine animals, or 77 per cent., vomited.

2. The smallest emetic dose of digipuratum was only 25.1 per cent. of the fatal.

3. The average emetic dose in the seven experiments in which emesis occurred was only 42 per cent. of the fatal, thus exceeding in relative emetic activity any of the non-proprietary digitalis bodies which we examined, with the sole exception of true digitalin, which is seen to occupy a position by itself.

DIGITALYSATUM

It is frequently asserted that the galenical preparations of digitalis, as well as the isolated principles, such as digitalin and digitoxin, do not represent the true actions

TABLE 4.—THE RELATIVE CARDIAC AND EMETIC ACTIVITIES OF DIGIPURATUM

Dose Administered in Percentage of Fatal Dose	Emesis	Remarks
25.1	+	Fatal dose determined.
27.2	+	Fatal dose determined.
35.0	+	Fatal dose estimated.
35.0	0	Fatal dose estimated.
43.7	+	Fatal dose determined.
50.0	+	Fatal dose determined.
50.6	+	Fatal dose determined.
57.0	0	Fatal dose estimated.
61.4	+	Fatal dose determined.

of digitalis because the constituents as they exist in the fresh leaf are altered in the process of preparation, changing their character. Thus the manufacturer of digitalysatum makes the following statement:

> According to Kunz-Krause the extracts of dried plants do not exhibit the characteristic molecule-complex of the drug in which it existed in the living plant; but they exhibit such molecule-complex broken and changed by the process of desiccation.

Digitalysatum is claimed to be a dialysate prepared from the freshly gathered plant without such desiccation, and among the asserted advantages of digitalysatum are that it is well borne by the stomach and is palatable.

We are unable to say whether these principles possess any peculiar therapeutic effect, but we can state unequivocally that digitalysatum has the emetic action of digitalis in a degree essentially similar to that shown by the official tincture.

An analysis of the results obtained with digitalysatum shows that they are strikingly similar to those afforded by digalen and digipuratum.

1. Two of the three animals, or 66 per cent., vomited.

2. The smallest emetic dose of digitalysatum was only 28.8 per cent. of the fatal, showing a greater relative emetic activity than any of the non-proprietary digitalis bodies, except true digitalin.

3. The average emetic dose of the two effective experiments was 36.5 per cent. of the fatal, also exceeding in relative emetic activity the average of any of the digitalis bodies except true digitalin.

FAT-FREE TINCTURES

The fixed oils which are found in digitalis and strophanthus have been blamed for at least a part of the gastro-intestinal symptoms which have followed the therapeutic use of those drugs. Wilcox[6] attributed the gastric symptoms following the use of the tincture of strophanthus to the presence of the fixed oil from the seed, but Poulet[7] had previously shown that this fixed oil from another species of strophanthus was absolutely inert, and in this laboratory we have found that the fixed oil of *Strophanthus hispidus* contained about one-thousandth part of the active principle of the seed from which it had been obtained.

The average dose of strophanthus, 0.065 gm. (1 grain) contains about 0.020 gm. (⅓ grain) of the fixed oil, and we have found that vastly larger amounts of the oil were without perceptible effect when administered to cats by the mouth.

The official tincture of strophanthus contains only traces of the fixed oil, hence there is no possibility that this oil is concerned with emesis which sometimes follows the oral administration of the tincture.

England[8] prepared a fat-free tincture of digitalis, and reported that patients could take it with less gastric disturbance than was seen with the ordinary tincture of digitalis, which contained the fixed oil.

TABLE 5.—THE RELATIVE CARDIAC AND EMETIC ACTIVITIES OF DIGITALYSATUM

Dose Administered in Percentage of Fatal Dose	Emesis	Remarks
28.8	+	Fatal dose determined.
30.0	0	Fatal dose not determined.
44.1	+	Fatal dose determined.

TABLE 6.—THE RELATIVE CARDIAC AND EMETIC ACTIVITIES OF FAT-FREE TINCTURE OF DIGITALIS

A commercial fat-free tincture was used for these experiments, but no extravagant claims were made for it by the manufacturer.

Dose Administered in Percentage of Fatal Dose	Emesis	Remarks
27.8	+	Fatal dose determined.
30.0	0	Fatal dose not determined.
40.4	+	Fatal dose determined.

A solid or semisolid fat such as that in digitalis or strophanthus is a very indigestible substance, and it is quite conceivable that the psychic effects of the disagreeable odor of the oil of digitalis might result in nausea in the case of a patient having an extremely irritable stomach; but it is not within the province of the present paper to deal with the psychic effects of odors.

The manufacturer of one of the fat-free tinctures says:

> To the extent that fat causes irritation of the stomach, producing nausea and vomiting, this product is superior to the U. S. P. tincture.

The fat-free tincture made by this manufacturer was tested in the manner previously described for the other digitalis preparations with the results shown in Table 6. In addition we have investigated the actions of the oil obtained from the tincture, and that directly from the leaf.

In order to test the effects of the fixed oil from digitalis we evaporated 100 c.c. of the official tincture of digitalis at a very low heat to a small volume, on a water

6. Wilcox: Am. Jour. Med. Sc., 1897, cxiii, 538.
7. Poulet: Bull. et mém. Soc. de thérap., 1890, p. 189.
8. England: Am. Jour. Pharm., 1899, lxxi, 332.

bath; this was shaken repeatedly with petroleum ether, the ethereal extract separated and evaporated. In this way we obtained 0.0145 gm. (about ¼ grain) of the impure oil. This was smeared on small pieces of meat and fed to a cat which ate it with avidity. The animal showed no gastric disturbance.

Owing to the extremely small yield of fixed oil from the official tincture of digitalis—one-seventieth of 1 per cent.—we next extracted a portion of the fixed oil directly from the leaf with petroleum ether and obtained 0.142 gm. (about 2 grains) a quantity equal to that to be found in 1,000 c.c. of the official tincture. This amount of the oil was fed to a cat in the manner described, without manifestation of gastric or other symptoms.

This animal received an amount of the fixed oil equal to that contained in 70,000 average therapeutic doses of the official tincture calculated for the weight of the cat.

A summary of the results obtained with the four digitalis specialties is given in Table 7.

For the sake of convenience in comparing the relative emetic activities of the more important of the digitalis bodies with those of the specialties, we will present Table 8 showing the minimum emetic dose of each, together with the averages of the emetic doses determined.

TABLE 7.—SUMMARY OF RESULTS SHOWN IN TABLES 3 TO 6 INCLUSIVE, WITH DOSES EQUAL TO OR EXCEEDING THE MINIMAL EFFECTIVE FOUND

Preparation	Emetic Dose in Percentage of Fatal Dose		Number of Experiments	
	Minimum	Average	Total	Effective Per Cent.
Digalen, liquid	30.1	38.2	9	55
Digalen, tablets	—28.9	40.3	6	66
Digipuratum	25.1	42.0	9	77
Digitalysatum	28.8	36.5	3	66
Fat-free tinct. of digitalis	27.8	34.1	3	66

Before passing on to a discussion of our results we wish to call attention to the fact brought out in our previous paper[1] that diarrhea, following small doses of the digitalis bodies, is also of central origin, and while we have confined ourselves in this paper to a discussion of the emetic actions of the digitalis bodies, we would have it understood that much that has been said applies with equal force to the question of the diarrhea.

DISCUSSION OF RESULTS

We believe that two facts stand out prominently as the result of our experiments: 1. The emetic action resulting from the stimulation of the vomiting center in the medulla is inherent in all of the true digitalis bodies, and it cannot be removed or prevented by any process of purification. 2. While we have limited ourselves in this paper to a discussion of the clinical aspects of these pharmacologic studies, we believe that the evidence which we have presented in this, and our preceding, paper is of such a nature that the burden of proof rests on those who would deny that digitalis causes nausea and vomiting in man in the same way that we have shown that it does in the cat and dog.

While advocating the clinical investigation of this question we must maintain that our results obtained on animals cannot be controverted by superficial clinical observations, but only by comparative clinical tests conducted with the same degree of accuracy as our experiments. It is well known that as clinicians we have been too prone to accept opinions concerning the digitalis specialties as furnished in the circulars of the manufacturers, and in our present paper we seek to show that many of these statements are without foundation in fact.

The clinician who would compare the emetic activity of one of the proprietary preparations with that of digitalis should assure himself that he is using amounts of the former comparable in cardiac activity to that of the digitalis with which he would compare it; and it must be remembered that these proprietary preparations are sometimes as notoriously unreliable and inconstant as the tinctures, fluidextracts and other official preparations of digitalis and strophanthus are so often asserted to be on mere hearsay.

We believe that we have called attention sufficiently to the need of more careful clinical studies of the digitalis bodies and preparations in order that we may become better acquainted with the unavoidable disadvantages of these drugs, and we may add that we have projected clinical and pharmacologic investigations of these problems.

Obviously if nausea and vomiting following the use of the digitalis bodies are of central origin they can result

TABLE 8.—THE MINIMAL DOSES AND AVERAGES OF EMETIC DOSES OF VARIOUS DIGITALIS BODIES AND SPECIALTIES

Drug or Specialty	Emetic Dose in Percentage of Fatal Dose	
	Minimum	Average
True digitalin	18	22
Strophanthus	27	47
Ouabain	30	49
Digitalis	31	46
Crystalline digitoxin	40	58
Amorphous strophanthin	61	65
Digipuratum	25	42
Fat-free tincture of digitalis	28	34
Digitalysatum	29	36.5
Digalen, tablets	29	40
Digalen, liquid	30	38

only after the entrance of these drugs into the general circulation; hence the practice advised of administering these drugs by other channels in order to spare the stomach is based on an erroneous conception, and when a clinician has observed the cessation of gastric symptoms after another mode of administration has been substituted for the oral, we can only suppose that the absorption of the digitalis body has taken place to a less extent as a result of this change in the mode of administration.

There is sound evidence—both clinical and pharmacologic—that certain of the digitalis bodies are absorbed but very slowly from the gastro-intestinal tract; hence the substitution of one of the members of the group, such as strophanthus for digitalis, may also result in lessened gastric symptoms because strophanthus is absorbed to a very variable degree.

The appearance of nausea and vomiting following the use of any of the digitalis bodies by whatever channel administered must be looked on in ordinary cases as a sure sign of the toxic effect of the drug on the medulla, and one which calls for an intermission of administra-

tion, rather than for the use of such drugs as opium to control the symptoms, as recommended by Hochheim.[9]

Hochheim advised the use of ouabain by the mouth in doses of 2.5 mg. (1/24 grain) three to six times a day, with opium to control the diarrhea which the ouabain induced. Since 0.015 gm. of ouabain is probably equal to several times the fatal dose for man by the vein, we believe the procedure advised is distinctly dangerous.

SUMMARY

The opinion is well-nigh universally held by clinicians and pharmacologists that the nausea and vomiting which sometimes follow therapeutic doses of the digitalis bodies are due to their direct irritant action on the gastric mucous membrane.

Analysis of the literature shows that this opinion is based on deductions, and not on experimental evidence obtained with *therapeutic* doses. This is wholly apart from the recognized fact that *massive* doses of these bodies applied directly to the gastric mucous membrane do cause irritation.

We have previously shown that all of the digitalis bodies are capable of causing nausea and vomiting when moderate doses are introduced into the circulation of the cat and dog, the amounts required in some instances being far less, actually, and relatively in proportion to the weight of the animal, than are those which have been used therapeutically in a single day.

We have shown that nausea and vomiting in these cases were due to the action on the vomiting center in the medulla, and, on the other hand, we found that vastly larger doses of some of these drugs could be introduced into the stomach without causing nausea or vomiting, and in such cases it was subsequently shown that little absorption into the blood-stream had taken place.

One cat in about ten will vomit after the intravenous injection of one-third of the fatal dose of digitalis, while three out of four will vomit from larger doses averaging half of the fatal dose; but some are quite resistant to the emetic action and die without the occurrence of emesis when massive doses are injected.

Only traces of digitonin or the fixed oil of digitalis are found in the galenical preparations, and they exert no appreciable effect on the stomach after the use of therapeutic doses.

True digitalin is relatively the most actively emetic of the digitalis principles, digitoxin being much less actively emetic, while digitalis is intermediate in this respect, agreeing with the fact that it contains both of those principles.

We have no means at present of securing the cardiac actions of the digitalis bodies without subjecting the vomiting center to the influence of these agents at the same time, and there is no advantage in substituting one mode of administration, or one member of the group, for another, and the employment of opium to prevent the gastro-intestinal symptoms of the digitalis bodies in ordinary cases masks the appearance of toxic symptoms which should serve as a signal for the reduction of the dose.

Our results certainly lend no support whatever to the claims made that digalen, digipuratum, digitalysatum or the fat-free tincture of digitalis is in any way less actively nauseant or emetic in proportion to its cardiac activity than any of the better known and less expensive galenical preparations of digitalis and strophanthus.

9. Hochheim: Zentralbl. f. inn. Med., 1905, xxvii, 65.

MOUTH INFECTIONS

THEIR ETIOLOGY AND A CONSIDERATION OF WHAT EFFECT THEY MAY HAVE ON THE VITAL ORGANS AND THEIR TISSUES *

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During the past twenty-five years the study of microorganisms has shown that certain types of bacteria may exist in certain portions of the body in quantities not sufficient to produce immediate death, but capable of producing toxins. These bacteria may attack the structure of the heart, the lungs, the kidney, the liver, the spleen, the brain, the spinal cord, etc. As a result the infected person may die some years later from nephritis, endocarditis, tuberculosis, or some other disease, but the real cause of death has been the constant development of certain forms of bacteria from which the toxins have proceeded direct to the most vulnerable vital organ.

Excluding pyogenic disturbances emanating from surgical or traumatic causes, invasions by such bacteria appear to be limited to the intestinal tract, the nasopharyngeal region and adjacent territory, and lastly to the mouth, from which source many of the infections of the previously mentioned regions have their origin. There are undoubtedly still many unknown parasites. It has but recently been discovered that many minute organisms are invisible even through our most powerful microscopes. The latest disease discovered by Flexner to be caused by a submicroscopic parasite is epidemic poliomyelitis or infantile paralysis. He says that all the known members of the class of submicroscopic organisms are disease producers. Miller in his great work on microorganisms of the human mouth, first published in 1890, repeatedly dwells on organisms which he was unable to develop. His great work in this field only served to make him positive that there were many bacteria which remained to be discovered.

At present it is commonly understood that the majority of known pathogenic organisms are constantly with us. It is impossible to find a mouth free from bacteria. Why they are harmless one day when perhaps on the following day they may in the same person produce infection is not thoroughly understood; but it has long been recognized that immunity is not due to any one cause, and this fact has made its study a complex one. The vulnerability of different persons varies, as we well know. Certain persons lose their immunity much more readily than do others. It is generally believed that differences in the character of the microorganism have a strong bearing on the susceptibility of the individual.

We are reasonably assured that certain forms of bacteria which attach themselves to our body and surfaces like the mucous membrane in the mouth defend these tissues from more injurious parasites which strive to gain a foothold. It has been demonstrated in certain infections that even when immunity does not exist there must be an abrasion of the skin of mucous membrane before infection is possible. This barrier is overcome when certain insects like the mosquito and the fly inject the microorganism directly into the circulation. Malaria, yellow fever and other diseases are caused in this manner.

It is well known that under some conditions a perfectly healthy person may be the carrier of pathogenic germs and thus may become the means of infecting

* Read before the general session of the National Dental Association, at its annual meeting, held at Washington, D. C., Sept. 11, 1912.

some person who is not immune. Flexner speaks of other factors which contribute to determine infection. He says:

> The period of childhood is especially characterized by a class of infections that depend on imperfections in the anatomic barriers that are far more adequate in adult life. Many of the diseases that we associate with childhood—measles, scarlet fever, diphtheria, epidemic meningitis and poliomyelitis—utilize the mucous membranes of the nose and throat to gain a foothold in the body, because they are notably vulnerable. Their crypts or depressions afford a lodging-place in which multiplication of the parasites can be effected, and the breaks in the epithelial covering constitute the first breach in the external defense which the parasites seek to, and successfully do, enlarge.

This argument will apply with even greater force to the unclean mouth with decaying teeth. The congested condition of the gums with accumulations of débris as well as salivary calculi, exposed as they are to the dust contents of the air and fluctuations of temperature, tend very likely to depress their protective powers to an even greater extent than those of the epithelium of the nose or throat. It is but a step for such bacteria to pass to the tonsils and the pharyngeal region. In fact, the greatest benefit to be derived, especially by the child, from frequent prophylactic treatment of the mouth, is the ability to have at all times a reasonable physiologic mouth and thus keep intact one of the greatest barriers to infection. It is by no means an easy lesson to teach to the most intelligent of our patients.

So far I have considered what are known as the external barriers to infection. These alone would be entirely inadequate to prevent the spread of many diseases of parasitic origin. There is a second line of defense, the internal, of much greater importance than the first, and on the strength of which immunization is chiefly dependent. Flexner describes this as follows:

> It consists of a group of substances contained within the blood but not produced there, and passing from the blood into the lymph, where they exert influence on the cells composing the organs, and on parasites in the interstices of the tissue. The chief site of the production of these protective and healing principles—immunity principles, so-called—is the very place where the blood corpuscles themselves are formed; namely, in the bone-marrow, spleen, and lymphatic glands.

The forms of bacteria in the mouth which have been of especial interest to the dentist have been the pus-producing or pyogenic bacteria. At the same time there are many reasons to suppose that numerous other organisms may be highly cultivated in different portions of the mouth and under favorable conditions become the direct cause of pathogenic disturbances in any of the important tissues of the body.

In studying the subject of oral infections it may be well to divide them into two classes: (1) conditions in which the infection is found in the mouth, and (2) conditions in which the infection is sealed in what is known as a blind abscess in the alveolar process in the intra-apical region. Frequently infections of the latter class will come under the first class when by reason of some increased irritation and inflammation or from operative interference the hitherto confined pus finds an outlet into the mouth.

INFECTIONS FROM THE MOUTH

The mouth is at all times the habitat of numerous pyogenic bacteria, which are ever ready to produce infection and pus formation if immunization becomes impaired.

The presence of purulent matter in the mouth may be due to various causes. The most common is perhaps the ordinary alveolar abscess, in which an infected dead pulp becomes a focus for a continuous flow of pus through the alveolar plate into the mouth. Following this in frequency are the various pathologic conditions around the peridental tissues which are most commonly grouped under the term "pyorrhea alveolaris." In such cases there is always a lack of immunity against the first line of defense, and as a result infection starts at the most vulnerable point under the gingivae, and progresses toward the ends of the roots of the teeth. This results in the formation of pockets alongside the denuded cementum of the root which increase in capacity according to the gravity of the case.

Another cause is some form of trauma which plays an important rôle in the formation of pockets of this nature alongside individual teeth. The destruction of the first line of defense in such cases is mostly produced by improper dental operations. The great number of cases in which only one or two teeth are affected in this way gives us absolute assurance that purulent exudations of this nature are not contagious. Another source of free pus in the mouth is found in impeded eruption of third molars. Purulent exudations in the mouth may also come from impaired tonsils or from the pharyngeal region. Exfoliating pieces of necrotic bone or roots are also frequent etiologic agents.

The effect on the rest of the body of the constant swallowing of purulent matter has been the subject of much argument. Many physicians have accustomed themselves to the habit of calmly dismissing this subject and assuring their patients that all bacteria and pus are destroyed in the stomach by the gastric secretions. Miller's experiments published over twenty-two years ago have been corroborated in every scientific laboratory which has taken up the study. He showed clearly that mouth bacteria are carried into the stomach and thence into the intestines. Granting that certain forms of bacteria are destroyed in normal quantities of gastric secretions, the fact remains that the stomach is devoid of acid peptic secretions during a large part of the time. Digestive action is stimulated by the taking of food. The mere swallowing of saliva and water does not suffice to cause a true digestion. At the commencement of a meal there is scarcely any acid in the stomach and only two or three hours later is the maximum amount of acid found. Science has to-day practically eliminated the idea that the gastric juice is a barrier to the passage of bacteria and pus from the stomach through into the intestines. In view of the fact that every one is constantly swallowing bacteria, the question arises as to the outcome. Another phase of immunity must answer this query. Undoubtedly most of the swallowed bacteria are destroyed, not by the digestive secretions of the stomach and intestines, but by competition with the normal intestinal bacterial flora which has preempted, so to speak, the ground where the nutriment is, after all, limited in quantity.

When, however, instead of merely swallowing the ordinary bacteria mixed with the food, the person is constantly swallowing certain amounts of pus, there is presented to us an entirely different problem. The nature, virility and number of the microorganisms must have a strong influence as to their ability to overcome the surface immunity of the digestive tract. All forms of diseases of the stomach and intestines are possible. By means of the development of such bacteria in the

digestive tract they are easily absorbed in the circulation and pass into the lymph spaces.

After this fortress of the body has succumbed, the bacteria with their poisonous results appear to be irresistibly drawn to the most vulnerable of the vital organs. Medical literature is replete with citations of almost every form of disease due to pyogenic bacteria being traced to this individual source. Hunter gives the following lucid classification of possible results:

1. Local affections, such as stomatitis, periostitis, sinus infections, inflammation and infection of the tonsils and the pharynx. Besides these diseases we meet many cases of diseases of the middle ear and different portions of the eye and a host of diseases of the skin often very remote from the mouth. Among these may be mentioned acne, alopecia areata, eczema, erythema, herpes, edema, seborrhea, erysipelas and others.

2. Glandular affections, especially about the neck.

3. Gastric and intestinal affections such as septic gastritis, septic enteritis, colitis and proctitis, appendicitis, cholecystitis and septic inflammation complicating typhoid ulceration.

4. Hematogenous infections causing pleurisies, empyemas, nephritis, pyelitis and perinephric abscesses, cholecystitis (and among surgical affections most notably osteomyelitis) and ulcerative endocarditis, various toxic effects on the blood, nervous system and kidneys connected with sepsis.

The poisons act sometimes more on one particular tissue, for example blood (causing septicemia, pyemia, anemia); or nerve (producing severe mental and degenerative effects). Sometimes the toxins may act more on the organs of excretion, for example the kidney (producing nephritis); sometimes on the skin (producing rashes); sometimes on joints (producing so-called rheumatic swelling).

All these different diseases have been noted by Hunter as a result of his hospital investigation into their etiology. It is not my intention to point out in detail every disease capable of owing its origin to pus in the mouth. The character of cases cited is sufficient to indicate that every pyogenic bacterial infection can possibly have its origin in this manner. Hunter's interesting statement of the localizations of these toxins in some one organ in one case and then again in some other organ in another case is borne out by many celebrated clinicians.

If we ask the question why certain bacteria or their toxic products localize in particular organs the answer must consist in a statement of observed facts, since an answer in principle is not possible with our present knowledge.

Most local infections, abscesses especially, are caused by the pus-producing bacteria. These bacteria are known to localize by preference in the heart, the kidneys and the voluntary muscles. The endocardium of the heart and the endocardium of the valves especially are subject to the localization of the pyogenic bacteria. It is believed that the susceptibility of the heart valves is determined in part by mechanical conditions, namely, the force with which the blood is thrown against the heart valves in the course of the cardiac systole. Under these conditions the bacteria suspended in the blood may be forced into the cells covering the surface of the valves. Once localized there they are more readily capable of multiplication. The pyogenic bacteria suspended in the blood tend also to be deposited in the glomerular capillaries of the kidneys where they may multiply; but on the whole, the number of cases in which abscesses are produced in the kidneys in human beings as a result of a general pyogenic infection is not large. The number is much larger in the experimental staphylococcus infection of the rabbit. Bacteria circulating in the blood are deposited by preference in the bone-marrow, spleen and liver, in which organs they often degenerate, but sometimes multiply and produce focal lesions. "Several factors enter into the separation by the different organs of the bacteria present in the circulating blood. They include (a) size of capillaries; (b) rapidity of the circulation, and (c) probably, capacity for elimination."

It must not necessarily be taken for granted when there is a diseased condition of the heart, kidney or other vital organ and at the same time a free flow of pus in the mouth, presenting symptoms known as pyorrhea alveolaris, that the mouth condition is necessarily the etiologic factor. In such cases the pyorrhea is more often the result than the cause of the malnutrition. Just as the toxins from mouth bacteria attack some special organ, we find that the malnutrition resulting from an inflammatory disease of some important organ impoverishes the circulation and consequently impairs nutrition. This impoverishment varies in character and form (not yet scientifically determined) according to which organ may be affected and the extent of the pathologic tissue. This impairment of nutritive cell is found at its maximum in the ultimate capillaries. The gum and peridental sockets afford by far the best example of the most ultimate of capillaries.

It is not unreasonable to suppose that the chemical change that takes place in the blood under such circumstances varies according to the organ involved and nature of the malady. This accounts for the great difference in the clinical picture of the gums in different forms of pyorrhea alveolaris. Irritation from uncleanliness soon destroys the first defense and the clinical appearance of the localized infected area varies from the soft spongy bleeding gums in diabetes to the firm pale and indurated gum in chronic nephritis. It varies from the dark purplish gum in valvular affections of the heart to the livid light pale gum in pernicious anemia.

These differences in the clinical picture when once understood point with unerring certainty to the original cause of the disease. Many years ago I was impressed with the value of mouth inspections in applicants applying for life-insurance, especially when some incipient form of malnutrition existed. Referring the matter to one of the largest companies I was met by a positive refusal even of investigation, because the officers did not desire to increase the difficulty of taking out an insurance policy.

INFECTIONS FROM BLIND ABSCESSES

Considering now the second division of our subject, we are confronted with an entirely different clinical picture. The fact that teeth may have abscesses at the ends of their roots without the exudation therefrom reaching the mouth has long been noted; but only since the use of the *x*-ray has become known in bringing to our view the detailed picture of the alveolar process have we been aware of the large number of blind abscesses which exist. Even to-day the skiagram is used so sparingly for diagnostic purposes that it is difficult to estimate the number of persons who are suffering from the constant absorption of pus sealed in the bony recesses at the end of a root and of which there is no external evidence. Gilmer of Chicago estimates this number at 25 per cent of the population.

Most of these abscesses are a result of the putrefaction and infection of a dead pulp in a tooth. There are, however, a proportion of abscesses which develop around the ends of the roots without any infection from the pulp, as these are known to be alive in many cases.

These are known as pericemental abscesses. There are also a certain proportion of such abscesses found at the ends of teeth in which there have never been any fillings, and which have never even had any external defects of structure; but when the teeth are opened the pulps are found to be dead. In such a case it is not unlikely that the death of the pulp is due to the pericemental abscess.

Inflammation with subsequent infection in the periapical space is at once accompanied by an effort of Nature to limit the area of the pathogenic exudate, and as a result a thick fibrous envelope, a granulomatous defense, surrounds the periapical space, thereby protecting the adjacent parts as much as possible.

The variation in the anatomic picture of the blind abscesses is great, not only as to size, shape and thickness of the protecting envelope, but as to the character of the exudate. When the power of the toxins rises to a certain pitch the envelope ceases to be able to protect the adjacent tissue. The inflammation becomes more extensive, the exudate forces its way between the sheaths of the tissue and generally terminates in an opening into the mouth by way of the alveolar plates. The spongy character of the alveolus makes their infiltration with pus a comparatively easy matter. Blind abscesses have been known to remain quiescent for many years, and then, on account of some change which has not as yet been scientifically demonstrated, produce such an increased activity as to lead to an open alveolar abscess.

Macroscopic investigation has demonstrated the fact that there must be a great variation in the constituency of the exudate, and in the number of cells, color and odor. The scientific investigation of these variations should prove interesting. Another field for investigation is to determine what may be the difference in bacterial nature between the exudate of a pericemental abscess and one resulting from putrefactive pulp tissue.

There is little doubt that in most cases of blind abscess a gradual absorption of the bacteria is going on continuously. The pathogenic bacteria escape from the local foci of infection by penetrating into the surrounding pervious lymph spaces and capillary vessels into which they push through continuous growth or are carried by their own motility or by motile phagocytes.

If time permitted it would be interesting to detail the histories of some of the numerous cases of blind abscess which have been followed by lymphatic infections, skin affections, septic endocarditis, arthritis, nephritis, etc. That such pathologic conditions ensue is borne out by the clinical observation of most reliable authorities.

Given a large carious cavity with a dead pulp, it is most probable that any of the well-known pyogenic bacteria could find a most favorable lodging place in such a pulp, where propagation would be a simple matter.

Undoubtedly bacteriologic investigation of the exudate in such abscesses and also of the focus from which they spring is necessary before we can make any scientific assertions of the diseases which may ensue from such a pus product.

This will be no easy task for the investigating dental bacteriologist. Some valuable work has already been done. In discussing this subject at the last meeting of the American Medical Association, Dr. C. J. Grieves of Baltimore stated that together with Dr. W. S. Baer of Johns Hopkins University he had made a study of over a hundred cases in which apical infection in blind abscesses was the primary portal of entry resulting in septic arthritis. In some of these cases of blind abscess they were able absolutely to isolate the infecting microorganism; this was found in all cases to be the staphylococcus. He says further:

> In almost every instance there had been some bad *apical* dentistry done; some portion of necrotic tissue left or some effort made to fill the root canal. . . . These cases were of long standing, with abnormal temperature that ran for months. Some simulated tuberculosis, but most of them were arthritics. . . . In many fistula cases associated with arthritis (not blind abscesses), when the fistula healed, the temperature of the patient would go up, showing pressure absorption from retention of pus, and when the fistula was opened and drained, the temperature would become normal again.

It must be remembered that Grieves and Baer were investigating only arthritic conditions. A few isolated cases will not suffice; they must be so numerous and of so great a variety of disease as to satisfy the scientific world. Clinical evidence, however, leaves us to-day in a position to believe that such investigation will show that there are few infectious diseases which may not start in this manner.

If anything approximating such a condition is found to be correct it makes the blind abscess much more dangerous than free pus in the mouth.

In these cases there is absolutely no escape from the penetrating bacteria. The symptomatic rise in temperature that so often accompanies such cases depends in degree very likely on the amount of bacteria that are able in a given time to escape into the circulation.

Unfortunately as a profession we must admit that most of the cases of blind abscess are the results of imperfect dental operations. These may be the result in some cases of bad judgment of the operator; in others they may be due to ignorance and incompetency; but in a large number of cases the condition is due to an educated dentist failing to give the time needed to perform an aseptic operation and leave a field that is absolutely free from the possibility of future infection. This is undoubtedly nothing short of malpractice when done by a dentist who knows. In a number of these cases the fee which the dentist could obtain if he gave the necessary time would be so small that it would not give him a living wage.

In most instances the fear of losing the patient if he charged a moderate fee for the time needed causes many men to perform what may justly be termed septic dental operations. Very likely few of them realize the grave danger to the life of their patient that may result from such methods.

The time has arrived when we should understand that the art of our labor is only a means toward preserving the health of the most important part of the body.

Without deriding the great value of the mechanics of our profession and realizing that its usefulness is in proportion to the skill and manipulative ability of the dentist, we must recognize that no dental work in which danger of infection lurks is permissible.

The solution of this problem is the education of the physician and also our patients to the danger of leaving septic foci in any part of the mouth.

Summarizing, we can safely assert that the health of the individual is always menaced by infection if pus is allowed to be produced in the mouth or locked between the walls of the alveolar structure.

All local causes of such infection should be removed as far as feasible.

Neither the mummifying method nor the retention of any small amount of pulp tissue in a root canal should be tolerated. Adequate methods of pulp removal have been evolved which are feasible in the vast majority of cases. This means removing from the root canals in an aseptic manner every particle of organic tissue, and sealing both ends of such an aseptic canal with a non-infectible filling material.

If a tooth is to be preserved under such conditions, the time required to perform such an operation properly should never be curtailed.

If for any reason it becomes impracticable to carry out a pulp operation on these lines the patient's interest is best served by the extraction of the tooth.

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OPERATION FOR EPITHELIOMA OF THE LOWER LIP *

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The ideal operation for lip cancer would be one that permitted the removal of the disease in block with the cervical glands and intervening tissue, as in the radical breast amputation. The method of Stewart[1] accomplishes this, but the resulting infection and sloughing is frequently extensive and severe, so that death has not infrequently occurred. Such a block dissection is unnecessary, however, because these epitheliomas seem to form their glandular metastases by embolism rather than by continuous growth along the lymphatics as in cancer of the breast. Moreover, the lymphatics draining the lips do not run over the point of the chin, which can be left to form a valuable support for the new lip.

Fig. 1.—Incision outlined and carried down to mucous membrane. Hemostasis made as complete as possible.

Fig. 2.—Mucous membrane flap dissected off. New lip beveled.

Lip cancer, on account of the loose tissue of the lip and the constant motion of the muscles, is prone to infiltrate far beyond the visible ulceration, and one should therefore feel free to cut wide of the apparent cancer. The V incision does not accomplish this, and I prefer, when less than half of the lip at its middle is to be taken away, to use the diverging incisions of Cheattle.[2] When the lateral half, or more than half in the middle is to be removed, the usual operations described make a very tense lip and frequently result in sloughing; other operations, as those of Estlander and Bruns, destroy the nerve-supply of the upper as well as the lower lip; others, as those of Von Langenbeck and Delpech, do not provide a mucous lining for the flaps, and those of Regnier, Diffenbach, Buck and Buchanan leave extensive raw areas. In my service, while we have not devised a new operation, we have combined the features of several others in the following fashion:

The operative field is anesthetized regionally after the method described by Eloessor.[3] In passing, I should like to emphasize heartily my concurrence in his statement that when an operator has done mouth-and-face operation in this way, he will never go back to general anesthesia. The proposed incisions are outlined by tincture of iodin (Fig. 1), those surrounding the growth being half an inch away from visible and palpable new growth. The flap is formed by slightly diverging curved incisions running from the angle of the mouth and the base line of the excised area over the cheek to the neck. The flap should contain the facial artery (Fig. 3) and be somewhat broader at the base than at its tip. The upper edge of that portion of the flap which is to form the new lip is beveled upward and a mucous membrane flap dissected from the cheek above to form a new vermilion border (Fig. 2). All incisions are at first carried down to mucous membrane and fascia, and bleeding completely stopped before the cavity of the mouth is entered.

Fig. 3.—Lip removed, leaving strip of mucous membrane attached to jaw. Flap separated from jaw (flap containing the facial artery).

Fig. 4.—Operation completed.

Fig. 5.—Epithelioma of lip in patient aged 72.

Fig. 6.—Result six weeks after removal of half of lip and part of cheek of patient shown in Figure 5.

The mucous membrane is now cut through and the lip removed (Fig. 3), leaving a strip attached to the jaw in front. The flap is detached from the jaw, but it is not necessary to dissect it loose from the neck (Fig. 3). If the head is bent forward the flap will now slide into

* From the surgical service and laboratory of the San Francisco Polyclinic.

1. Stewart, J. Clark: The Radical Treatment of Epithelioma of the Lip, THE JOURNAL A. M. A., Jan. 15, 1910, p. 175.

2. Cheattle, G. Lenthal: Epithelioma of Lip, Practitioner, London, July, 1906.

3. Eloessor, Leo: Recent Advances in Regional Anesthesia, Cal. State Jour. Med., March, 1912.

place without tension and is sutured first to the strip of mucous membrane left in front. It is not necessary to remove a triangle from the cheek except when the cancer is at the angle.[4] The rest of the mucous membrane and skin sutures are now put in place (Fig. 4).

Before the new vermilion border is sewed in place, hemostasis must be very carefully attended to, or the thin flap will be lifted off and die. The lower part of both incisions is left open and the drainage is taken care of by gutta-percha tissue. This must be left in for several days to prevent pocketing and thickening of the flap. If Steno's duct has been cut it is reinserted through a puncture hole in the mucous membrane and held by a single catgut stitch. After the operation the mouth must be carefully washed at frequent intervals with 0.25 per cent. compound solution of cresol, special care being used to irrigate between the new lip and the teeth. Two weeks later the block dissection of the neck is made in accordance with the principles laid down in a former paper.[5]

Figures 5 and 6 show epithelioma of the lip and appearance of the patient six weeks after operation.

162 Post Street.

MEDICAL SUPERVISION OF FACTORY EMPLOYEES *

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WORCESTER, MASS.

The modern factory is an epitome of human effort. So much depends on the physical condition of the men employed that it is curious that only recently has the employee received any attention. A change of this condition is now rapidly taking place, and more and more attention is being paid to the man problem.

In most factories this attention has taken the form of improved sanitary and working conditions and care of accidents. Natural progress toward increased efficiency, as well as recent compensation laws, is exerting pressure along new lines, and a scientific study of the physical condition of employees in sickness and health would seem to be the next step.

The problem has been worked out in a superficial way during the past year by a manufacturing plant in Worcester, Mass.,[1] employing about 1,200 men and women, the men greatly predominating. The methods employed and the results obtained form the matter of this paper.

It is obvious that before accurate work can be done with a large number of individuals, a definite knowledge of the physical condition of each must be obtained.

Our first step, therefore, consisted in making a complete physical examination of each employee in a small, well-equipped hospital and recording the same on a card for filing. The examination was made as complete as that given to patients admitted to a general hospital with the exception of the urinalysis, which was done only when some indication existed. We should have made a urinalysis in every instance if time had permitted. Where no defect was found the word "normal" was stamped opposite the part examined, but all defects were carefully noted at length, and filled in on the diagram. At the end of the card, under "diagnosis," the most prominent defects were noted, as well as any general remarks on the case.

In each case the examination was carried on with no third person present, and after its completion the employee was told of any defects found and advised as to the best method of caring for himself. Thus, men having defective eyes were advised to see an oculist, those having hernias to procure trusses, while those with heart trouble were not only advised as to exercise, etc., but, when there was any sign of disturbed compensation, the patient was reported to the superintendent for change of work at the same wages. This was arranged in every case.

As far as we know no factory or corporation has up to this time made a complete physical examination of each employee, with the object of remedying any defects found which could be remedied. Railroads and certain other corporations demand a physical examination of employees from a selective point of view, but defects are not remedied. If severe, they prohibit the applicant; if slight, they are passed over. Under the system we are now considering, every effort is made to gain the cooperation of the workman in overcoming his defects and the company endeavors to assist him by slight changes in the type of his work where this is indicated.

Naturally when active contagious disease is discovered, the employee is discharged until in condition to work without danger to others.

It will be readily recognized that a large number of defects play only a small part in unfitting a man for work, but the constant drag of these little things in the long run acts as a marked handicap.

After a complete physical examination had been made of each employee and those found to be defective in any organ advised of their defects, the defectives were grouped by cross-index into regional defects; thus, all defective eyes were grouped under "eyes," defective ears under "ears," etc., etc.

A reexamination was then begun to ascertain whether the men had followed the advice given, and with what result. The result of the reexamination was most gratifying. It was found that in almost every case the men had followed the advice, and in many cases were already much relieved. For instance, it was found that the men with hernia had all procured trusses, and one went so far as to have the curative operation performed. The men with heart trouble, several of whom had disturbed compensation, were also much more comfortable, partly owing to slight changes in their work, and partly to the realization of their condition and what they must avoid.

It was evident, on looking over the eye defects, that glasses would be necessary. The men were called to the hospital and a free examination by a first-class oculist was offered them, without cost, provided that they would consent to buy the glasses prescribed. With eighteen exceptions the men agreed, and the company immediately made arrangements with a prominent oculist to examine the eyes and prescribe glasses and also to examine the defective ears more carefully. This work has been completed but the results have not yet been reported.

The examination of the lungs was extremely interesting because of the small amount of trouble found. The nature of the business (making grinding wheels) led us to expect a large number of cases of chronic

4. Sutton, Walter S.: A New Incision for Epithelioma of Upper and Lower Lips of Same Side, THE JOURNAL A. M. A., Aug. 20, 1910, p. 647.

5. Ryfkogel, H. A. L.: Special Factors Concerning Surgery of Cancer of the Lip and Tongue, Cal. State Jour. Med., May, 1912.

* Read before the Worcester County Medical Society, Sept. 11, 1912.

1. Norton Company.

lung disease; we found only thirty cases of emphysema and six cases of active pulmonary tuberculosis. The latter disease was sought for particularly. Sputum examinations were made in all suspected cases, frequently three times, temperature was taken in the afternoon, and reexaminations were made at regular intervals. By these careful methods three incipient cases were discovered and the patients were sent to sanatoriums where the diagnosis and stage of the disease was confirmed. One of the patients has just returned to work cured.

Among the less serious conditions in which the relief given was much appreciated, flat-foot stands prominent.

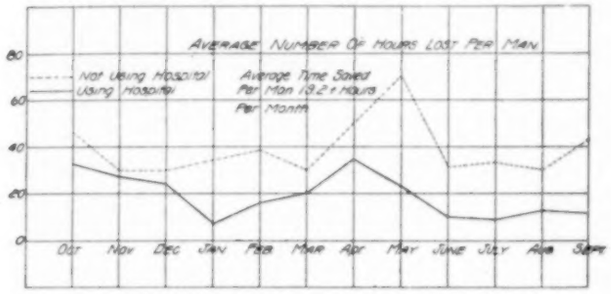


Fig. 1.—Chart showing the average loss of time for one year of all men losing time on account of sickness. Those using the hospital are represented by the unbroken line; those not using the hospital, by the broken line. Men using the hospital and not losing time are not considered.

Putting men with this defect on simple plates has made a great change in their comfort and ability to work.

Although the examination of the genito-urinary tract was made with considerable care, only four cases of gonorrhea and but one case of syphilis were found. We consider this condition of things extraordinary and can give no explanation.

It will be at once evident that examinations and reexaminations while of great value will not by any means cover the medical needs of a large factory. Accidents must receive first aid and, under the new workmen's compensation act, subsequent dressings, and cases of immediate sickness must be provided for in such a way that the least possible time will be lost.

Sanitation must also be inspected and kept at the top notch of efficiency. In the plant in question these matters are all in the hands of the medical department, which has divided its duties into medical and sanitary.

MEDICAL ARRANGEMENTS

The medical arrangements may be divided into medical and surgical.

1. Medical.—All men reporting themselves sick are advised by their foremen to go to the hospital for examination and advice. On arrival at the hospital a careful history is taken on a separate card, just as it would be at a general hospital. Then the physical examination card is gone over in order to see if there are any defects which may be the basis of the complaint. Thus, in a case of vomiting, it is of obvious advantage to know that there is no hernia, or to know that there is a poorly compensated heart lesion present in a case of dyspnea. After comparison of the history with the physical findings, if the symptoms warrant it, a local physical examination is made, and the temperature and pulse are taken. A full record of the physical examination is made, and a tentative diagnosis written. The patient is then advised whether to continue work or not, and his condition is explained to him.

When there is any condition requiring immediate medication it is given, but no cases requiring the care of a physician are treated. When a man has a temperature of 100 F. or over, no matter what the diagnosis, he is sent home at once, and urgently advised to call in his family physician. There are, however, a large number of patients who do not come under this category. These men apply to the hospital with beginning colds, constipation, diarrhea, myalgia and all the simpler ailments of every-day life. We have found that these patients, if uncared for, go home, lie around for two or three days, and finally return to work in a rather miserable condition. They cannot afford to call in a physician, will not go to a clinic and so resort to home medication. After obtaining this history from a number of men, we decided to give the very simple treatment indicated, provided the patient did not have a temperature exceeding 100 F.

The results have been most gratifying. By a system of cards filed with us by the foremen on the return of a sick man to work, and a comparison with our hospital files, we have been able to make out a chart of the average time lost by the men using, versus the men not using, the hospital (Fig. 1).

The conditions have been fairly parallel; in some cases, as in a slight epidemic of infectious sore throat, almost exactly so. Moreover, the men applying to the hospital had, in the majority of cases, more real sickness than those not applying, the reason being that as the work is done on a piece basis, men did not come to the hospital on their own time unless really in need of help.

We also found that very many of the men who lost time did not use the hospital because they did not become sick until after they had left the factory, and therefore had had no medical assistance. Therefore we feel that the saving of time by those using the hospital is a fair index to the efficiency of the prophylaxis adopted.

Fig. 2.—First-aid jar containing: one tourniquet, three gauze bandages of different widths, one 6-inch muslin bandage, three tongue-depressors, one package of large safety-pins, one 1-ounce bottle of aromatic spirits of ammonia, one package of gauze sponges and one pair of crucible tongs.

We would reiterate that our object is to prevent, not to cure, sickness in the factory.

2. Surgical.—In the treatment of accident, however, our object is to cure in the shortest possible time, following exactly the wishes of the patient in regard to the saving of mutilated parts. Our method of handling accidents is as follows:

The foremen, having received a thorough course of instruction by the physician in charge, were all pro-

vided with first-aid jars (Fig. 2). The advantages of these jars over the commonly used boxes are:

1. They are clean and can be used to carry water to the injured when necessary.

2. They are transparent, and it can be seen at a glance whether they are completely equipped.

3. They are easy to carry.

4. They cannot be opened and the contents extracted by a nervous person. (The opening is too small to admit the hand and the contents must be withdrawn by the tongs, which are also used for holding out the tongue in cases of electric shock, etc.)

Posted in each department is an abbreviated card of instruction for accident.

The majority of accidents are treated in the hospital without a first-aid dressing, and it is only under severe emergencies that the jars are used.

A male trained nurse is in constant attendance at the hospital, and on the arrival of an injured man he cleans and dresses the wound. For the last six months we have used the benzin-iodin cleansing and a dry dressing; for the eight months preceding we used the usual soap and water-bichlorid method. The results have been equally good and in fourteen months we have not had a single case of infected wound. We treat on the average two fresh wounds a day. We prefer the benzin-iodin preparation of wounds, because it is quick and not so painful as the scrubbing.

When a serious accident occurs the nurse calls up the physician (who spends an hour and a half each morning and afternoon at the factory) and has the patient prepared for treatment on his arrival. The history, physical examination and treatment, as well as subsequent dressings, are carefully noted on a card similar to that used for cases of sickness.

SANITARY METHODS

The sanitary arrangements in most factories are under the supervision of a man who has many other, and to him, more important duties. The result is a neglect of everything but the grossest necessities, after the instalment of the sanitary fixtures. In the factory under consideration this, and all kindred responsibility, is turned over to the medical department, where the responsibility should rest.

We divide our work into (1) the care of toilets and locker-rooms; and (2) matters pertaining to the general health of the factory.

1. Our system for keeping toilets and locker-rooms in the best condition is as follows:

A. In each plant a man is assigned who does nothing but clean and polish. This employee is entirely under the control of the hospital nurse from whom he receives his orders.

B. The hospital nurse makes rounds weekly and reports to the physician.

C. The physician makes rounds every two weeks, examining everything personally, and recommending any changes he may consider necessary.

The cleaning methods adopted are those in use in the U. S. navy, and are very efficient for factory use.

2. Matters pertaining to general health of the factory. A description of the work done during the past year will explain this branch.

A. Flies.—Early in April a careful investigation was made of the grounds for fly-breeding spots. Several of these were found and they were promptly eliminated on the physician's recommendation. As soon as the flies first began to appear traps were set in all departments, and the entire office building carefully screened.

This had already been done in past years but we were able to improve on it in a number of places. The result was an acknowledged lessening of flies all over the works, and a practical abolition of them in the offices.

B. Care of Telephones and Phonographs.—An order was sent out from the main office requesting all departments having telephones or phonographs to keep the mouth-pieces clean with a solution provided in small bottles by the medical department.

We then left a 1-ounce bottle of 2 per cent. liquor formaldehydi with a dozen cotton sponges at each telephone and arranged a wire with a piece of gauze attached for cleaning the phonographs. The hospital nurse makes regular weekly rounds to see that telephones and phonographs are kept clean.

C. Rats.—These appeared in large numbers about the dump previously mentioned. After removing the garbage, we saturated 60 pounds of waste meat with strychnin and placed it where the garbage had been. The meat disappeared and so did the rats.

D. Noticeable Spitting.—This has been reduced to a minimum by notices and a type of cuspidor (designed by the medical department) which is very large and easily cleaned. It is filled half full of a mixture of sand and chlorinated lime.

E. General Information in Regard to Hygiene and Prophylaxis.—This is given by a series of folders called "health bulletins." The medical department publishes one of these bulletins each month and distributes them in the pay envelopes of the men. The subjects treated thus far are (1) rupture, (2) spitting, (3) flies, (4) diarrhea and (5) the human eye. These bulletins are eagerly sought for and read by the men, and already their influence is becoming apparent in the intelligent interest shown by applicants for hospital advice.

CONCLUSIONS

From the results of sixteen months' work we have drawn the following conclusions:

1. It is possible for a simply equipped medical department to control with success the sickness and disability from accident in a large factory.

2. A complete physical examination of all employees is perfectly possible and of great advantage to employer and employee.

3. A system of prophylactic treatment in cases of sickness and accident will materially lessen the amount of sickness and decrease the loss of time.

4. The sanitation of a large factory and all matters pertaining to the general health of the employees can best be maintained by a medical department.

5. Far from exciting distrust and antagonism, a shop hospital, run on the lines laid down, will create a feeling of good will between employee and employer.

37 Pearl Street.

Rural Typhoid.—The country people at present have not learned those precautions which are absolutely necessary to prevent the spread of the disease from the bedside of the patient, and that frequently the disease is spread over large areas of country by contact alone. From our knowledge of the transmission of typhoid, taking into account the isolation and lack of intercommunication of the country people, we may confidently expect that an improvement in the sanitary arrangements of our farms, specifically in the building of a sanitary privy for every home and a more careful observance of the precautions of the sick-room, will result in a marked decrease in the prevalence of typhoid in rural districts.—Freeman, *Public Health Reports.*

THE TECHNIC OF GASTRO-ENTEROSTOMY

WILLARD BARTLETT, A.M., M.D.
ST. LOUIS

For years I have performed gastro-enterostomies in a manner that permits the position and direction of the incision in both stomach and bowel to be accurately located. I have felt that this is not always accomplished, as the operation is ordinarily performed, because a relatively large amount of each viscus is drawn up between the jaws of the Moynihan clamp before the sutures are placed.

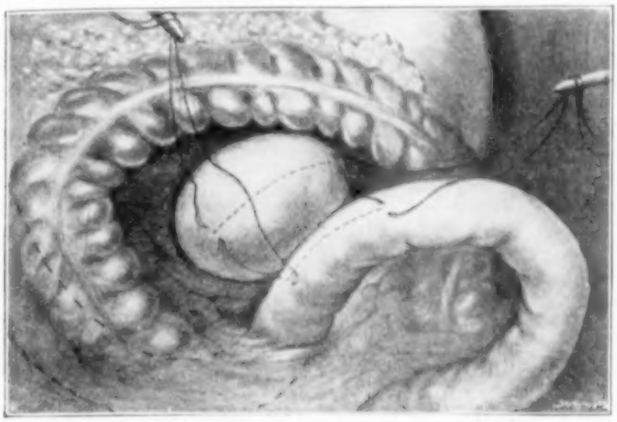


Fig. 1.—The stomach and jejunum are caught with two sutures in such a manner that the highest portion of the jejunum is applied to the lowest portion of the stomach which naturally lies contiguous to it, the object of this being that the intestine may follow its natural course when the operation is complete, as suggested by W. J. Mayo.

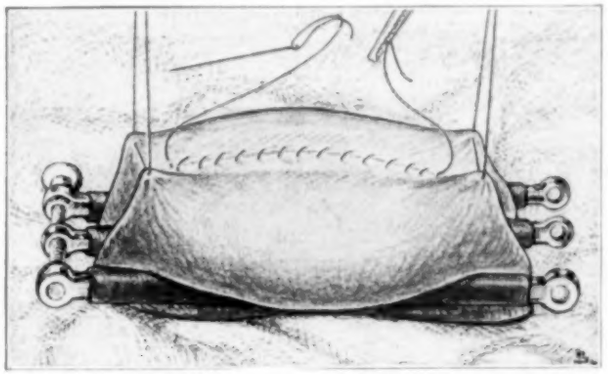


Fig. 2.—A continuous serous suture of silk has united the two points at which the viscera have been approximated by the threads referred to in Figure 1, and now the middle blade of the gastro-enterostomy clamp has just been inserted under this union and the device is ready to be locked.

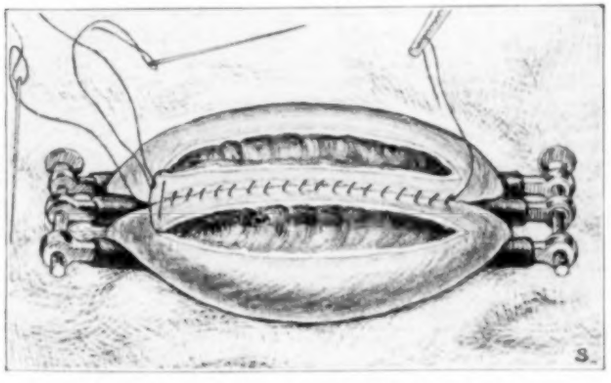


Fig. 3.—The clamp has been locked, the stomach and intestine have been cut open and the inside row of silk continuous sutures commenced.

In performing a gastro-enterostomy, there is an anatomic status which should be obtained—a status which William J. Mayo considers most satisfactory—namely, the establishment of an opening starting about the middle of the posterior wall of the stomach and running obliquely downward and to the left, as shown in Figure 1.

After the abdomen has been opened I expose the highest part of the jejunum, without altering its normal direction, as it passes out from under the peritoneum. Two guide sutures are then placed in the wall of this structure at two points high up and almost 7 cm. apart.

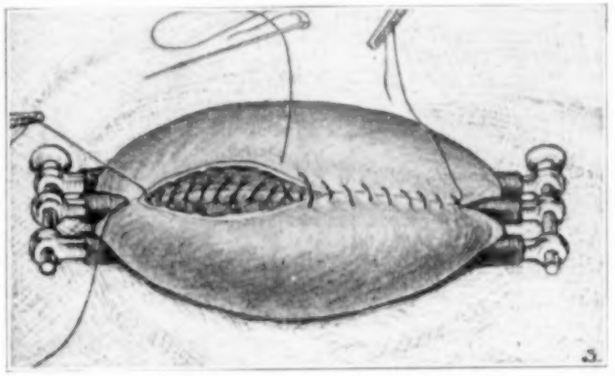


Fig. 4.—The posterior portion of the inner suture line, as well as one-half of the anterior portion, are complete.

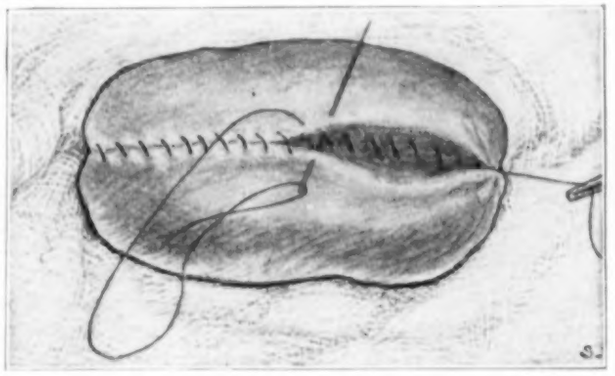


Fig. 5.—Completion of the inner row of sutures. The clamp has been removed to facilitate approximation. The anterior half of the outer row of sutures is seen to be half-way complete.

Fig. 6.—The author's gastro-enterostomy clamp. It exerts uniform pressure all along its three blades. This can be graduated to any desired degree since two of its blades float and the screws are tightened only after the desired pressure has been obtained by one hand bringing all of the three blades together to prevent the escape of blood and visceral contents.

The stomach is then brought down through an opening in the transverse mesocolon and the posterior wall of this viscus is matched accurately to that portion of the jejunum between the silk sutures.

With the proximal suture the contiguous stomach wall is caught at a point about midway between the two curvatures, while the lower, in a normal case, is inserted into the stomach wall, well toward the right and at, or very near, the greater curvature. Thus the position

and direction of the jejunum determine the intended incision in the stomach (so that when the viscera are replaced in the abdomen at the completion of the operation, they lie approximately in their normal positions). A continuous Lembert suture of silk is then placed, uniting the two points at which the viscera have been approximated by the guide sutures (Fig. 1). My gastro-enterostomy clamp is now placed in position with the middle blade, as shown in Figure 2, under the line of union made by the running suture. The clamp is then locked, and the stomach and intestine are opened (Fig. 3). An inside row of through-and-through continuous sutures is carried completely around the opening (Fig. 4). The clamp is now removed, so as to facilitate approximation, and the through-and-through continuous sutures are covered by an outer row of silk sutures, which brings together the serous surfaces (Fig. 5). The lips of the wound in the transverse mesocolon are now attached to the suture line in several places.

The gastro-enterostomy clamp (Fig. 6), which I have devised is made up of three blades held together by two screws. The advantages of using the clamp are twofold: it exerts a uniform pressure along its three blades, and this pressure can be graduated to any desired degree, since two of its blades float.

405 North Grand Avenue.

GRAFTING AND TRAUMATIC DISSEMINATION OF CARCINOMA IN THE COURSE OF OPERATIONS FOR MALIGNANT DISEASE

WILLIAM J. MAYO, M.D.
ROCHESTER, MINN.

Ontogenous grafting of carcinoma may occur spontaneously especially at points of contact, as about the labia, vulva, and in the gastro-intestinal tract. In the large intestine, at least, grafting may occur not only at points where the mucosa of the opposite wall of the intestine comes in contact with the carcinoma, but has been known to occur by the process of "seeding," in which malignant cells from the tumor have become detached and grafted on the surface of the mucous membrane, sometimes at a considerable distance from and usually below the original growth. The grafting may take place above the growth as well, the cells being carried to proximal points by antiperistalsis.

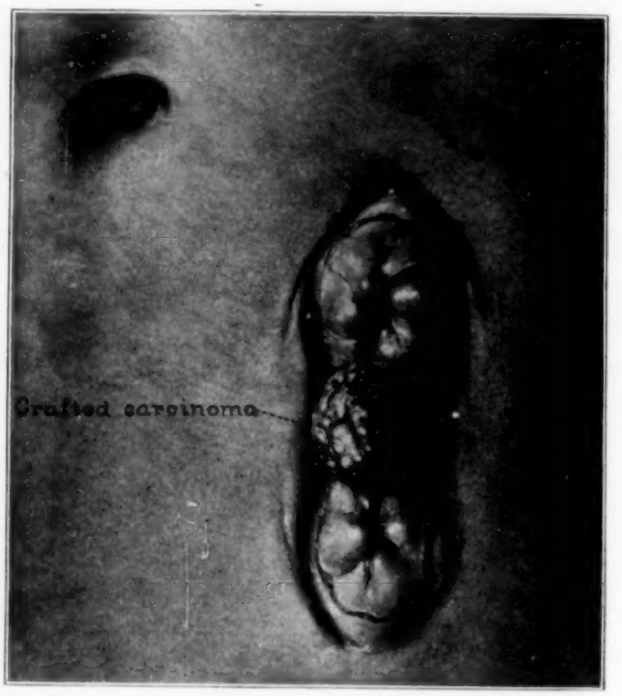
In the days of Rokitansky and Virchow, morbid anatomists recognized ontogenous grafting of carcinoma, and interesting references to its occurrence will be found in the literature of that period. Little, however, seems to have been written concerning it within recent years. I remember an incident which occurred while I was a student in medicine. My father called my attention to a carcinoma of the upper lip which had grafted from an advanced carcinoma of the lower lip, and told me that he had observed similar conditions in other situations.

Realizing the possibility of spontaneous ontogenous grafting of carcinoma, we must also appreciate that the condition may be induced by operative manipulations.

In one of my early resections of the pyloric end of the stomach I had an unpleasant experience. The abdominal wall became infected with carcinoma in the needle punctures made in closing the abdominal incision. This was before the days of elastic clamps which control the escape of the carcinomatous material into the abdominal wound. After this example of carcinomatous grafting I began searing the raw surfaces of the stomach and duodenal stumps following partial gastrectomy for cancer, because I believed that grafting sometimes occurred from bits of loosened carcinomatous tissue freed at operation and left in the cavity of the stomach.

Ontogenous peritoneal grafting in carcinoma of the stomach occurs frequently and is especially common in the pouch of Douglas. These points of grafting may be felt by rectal examination as typical nodules attached to the anterior wall of the rectum on its peritoneal surface. The ovaries are particularly susceptible to such grafting; the involved organs rapidly become cystic and may obscure the original focus of the disease. An example of late grafting occurred recently in our clinic.

The patient, a woman aged 38, from whom two-thirds of the stomach had been removed two and one-half years previously, returned to the hospital with secondary involvement of the ovaries and pelvic peritoneum, but without evidence of involvement in the upper abdomen.



Carcinoma grafted on granulating left rectus colostomy wound.

Another case which occurred in our experience is an example of the possibilities of carcinomatous grafting in a granulating wound. A two-stage operation for carcinoma of the rectum was performed. At the first operation a permanent colostomy was made in the left rectus muscle, and after thorough cleansing of the rectum and lower sigmoid by means of irrigation between the anus and colostomy wound, on the twelfth day the entire rectum and rectosigmoid were removed from behind, using a modified Kraske exposure. The sigmoid was divided at a point six inches above the growth, the end turned in and left as a blind attachment to the colostomy wound. The patient made a prompt recovery and went home at the end of four weeks. Seven weeks later he returned with a typical carcinomatous growth on the inner edge of the colostomy opening. At the time of his dismissal there was a small granulating area unhealed on the mucocutaneous margin of the colostomy wound. There were no other evidences of metastasis, and after the removal of the localized growth the patient had no further trouble. (See illustration.)

The obvious explanation in this case is that during operative manipulations pieces of the carcinoma were

loosened and left in the sigmoidal pouch, and as they were discharged out of the colostomy opening grafting took place at the site of the granulations just as bits of skin might have been grafted to this surface.

Therapeutic grafting of normal epithelial elements to cover raw surfaces is of course a well-known procedure. The Reverdin grafts, the Thiersch and Wolff grafts, represent the common forms. That therapeutic grafting is by no means confined to ontogenous sources is shown by the excellent work of Davis,[1] who has grafted such surfaces by means of cold-storage material obtained from amputated limbs, etc., and used it successfully as long as four weeks after the amputation. We know that epithelial cancer has potential initiative far in advance of normal epithelium, and that what happens under scientific direction for therapeutic purposes may be equaled by pathologic accident.

One reason for the small percentage of permanent cures following operations for cancer of the cervix is the proximity of the ureters to the cancerous process in the cervix. Normally the ureters and cervix are ¾ inch apart, but with malignant enlargement of the cervix they may lie in contact. While it is true that the ureters are not often involved primarily, we cannot expect to push them back out of the way during operative manipulations without carrying infection, as the results often demonstrate.

Traumatic dissemination of malignant disease is not uncommon. We have observed several cases of cancer of the breast which have been squeezed and manipulated by ignorant persons until a comparatively curable case has been rendered hopeless because of acute involvement of the skin and fascia.

Embolic vascular dissemination through traumatism is common, especially in cancer of the rectum. The infected thrombi in the derivatives of the portal vein are loosened and carried to the liver.

It is now nearly fifteen years since I abandoned cutting instruments for the cautery knife in performing vaginal hysterectomy for cancer of the cervix. I believed that vaginal hysterectomy done in this way furnished an opportunity for carcinomatous infection of the wound and traumatic dissemination through the lymphatic and vascular systems. It is worthy of note that while I had few cures during the period in which the knife was used, I noted a considerable percentage of cures after adopting the use of the cautery. The unexcelled results achieved by Byrnes in the use of the galvanocautery in high amputations of the cervix for carcinoma were probably due largely to the elimination of these causes of cancer dissemination.

The better results attributed to abdominal hysterectomy for cancer of the cervix as contrasted with vaginal hysterectomy may not be due so much to the removal of the pelvic and iliac lymphatic glands as to the fact that thorough destruction of the carcinomatous cervix is accomplished with the cautery immediately preceding the abdominal incision. When such thorough destruction has been made immediately preceding vaginal hysterectomy, I have observed little if any difference in the ultimate results, other things being equal. There are, however, many cases which are not suitable for the vaginal operation and in which the abdominal route, by furnishing freer access, gives better results.

The removal of pieces of tumor for microscopic examination should be attended by some precautions, and if possible preparation for the immediate extirpation of the growth should be made if the frozen section shows malignant disease. If the suspicious tumor be localized, as in the breast, it is wise to remove the entire tumor for examination without cutting into it and then, if necessary, do the radical operation at once. If removal of the specimen cannot be followed by immediate extirpation, the wound in the growth should be sealed by the use of the actual cautery or pure phenol (carbolic acid).

We should take into strict consideration the possibility of the dissemination of carcinomatous material during operative procedures. A specialized technic should be inaugurated in which carcinomatous processes would be treated as though they were the focus of virulent infection.

The first and most important principle in operations for malignant growths is wide, local extirpation. More than a quarter of a century ago Heidenhain established the law that in operating for the removal of carcinomatous growths the limiting incision should be made at least 3 cm. from the visible expression of the disease. This limit is now considered by surgeons to be altogether too narrow for safety.

The second principle is the removal of the tributary lymphatics, if possible, by block dissection as advocated by Crile.[2] In this procedure the lymphatic channels, glands and the primary disease are removed in one mass.

The third principle in the operative technic in these cases is to avoid grafting or traumatic dissemination of malignant cells during the course of operation, and by proper prophylaxis prevent the possibility of grafting following operation.

1. Davis: Ann. Surg., 1910, li, 40-51.

TEMPORARY EMBOLISM OF THE MESENTERIC ARTERY

MAX BORNSTEIN, M.D.
MILWAUKEE, WIS.

REPORT OF A CASE

The following case ran a peculiarly interesting course and is worthy of note. I use the term "vegetative endocarditis" advisedly, because it was not possible to obtain an autopsy in order to verify the diagnosis of the pathologic condition of the heart.

History.—Oct. 3, 1912. Mrs. E. S., Hungarian, aged 27, married five years, had one child 3 years old. She had had two abortions, one before and one after the birth of this child. She gave an evident history of a former appendiceal inflammation about two years ago. Three weeks ago she consulted several physicians for the relief of some heart ailment. She was unable to recall any definite rheumatic attack. At 5 a. m., Oct. 3, 1912, I was called to see her. She was then in a very critical state; the case was one for emergency measures. Temperature was subnormal, and pulse rapid, weak and irregular. She was reacting from shock when I arrived, and was then suffering intensely from violent intestinal cramps. She appeared very anemic and was nauseated, but did not vomit. The heart was markedly enlarged both to the right of the sternum and to the left as far as the axillary line. There were murmurs over the mitral, aortic and tricuspid valves, but these were too weak to be defined.

Operation.—The patient was hurried to the hospital (Mount Sinai) where, two hours after the onset of the abdominal symptoms, I opened the abdomen and found the following conditions: The peritoneal cavity contained a considerable amount of turbid yellowish fluid; the small bowel and the ascending and transverse colons were intensely anemic and tightly contracted. During the manipulation of the bowel its color sud-

2. Crile: THE JOURNAL A. M. A., Dec. 1, 1906, p. 1780.

duly returned and the spasm relaxed. The vermiform appendix was removed. It contained five fecal concretions, each separately encysted. The uterus and its adnexa were normal. The liver was not enlarged, and the gall-bladder was easily emptied of its contents. The patient was returned to bed in fair condition.

Three hours later the patient awakened from the anesthetic and complained of excruciating pain in her left leg radiating from her knee down to her foot, which was cold and cyanotic. The application of heat and elevation of the limb offered no relief, and the injection of morphin, ¼ grain, and scopolamin, 1/100 grain hypodermatically, eased her suffering. The pulse had disappeared from the posterior tibial artery where it winds around the internal malleolus, and it could not be felt in the popliteal space. Dry gangrene was the inevitable result and the line of demarcation became defined above the ankle-joint soon after.

Meanwhile the patient's general condition had vastly improved, and she was able to take and assimilate general hospital diet. The bowel movements had become regular and normal in appearance, and no blood was to be found. Urine contained hyaline and granular casts and albumin, but no sugar. She had no pains in the legs and nothing pointed to attacks of Raynaud's disease.

October 18, with the patient deeply under morphin and scopolamin and a very slight quantity of chloroform anesthesia, I amputated the left leg at the knee. The next day she developed acute dilatation of the stomach, which subsided after repeated lavage and several hypodermatic injections of physostigmin sulphate. A few days later while she was talking to her husband, she fell suddenly backward and expired after a few convulsive movements of the left side of her body. Autopsy was refused.

The question arises, were the tetanic intestinal spasms and the intense intestinal anemia due to an embolus, temporarily lodged in the superior mesenteric artery, or was there some other obscure cause which might account for these symptoms? Experiments on dogs have proved that temporary occlusion of the mesenteric artery produces violent tetanic spasm of the bowel with the accompanying anemia; if the occlusion is removed early enough, the bowel will return to its normal state, but if the occlusion is continued long enough, hemorrhagic infarction and sloughing ensue.

In this case I believe that the whole train of symptoms followed the erratic course of an embolus which had broken off from an endocardial vegetation and its lodgment.

This embolus was probably lodged at first in the superior mesenteric artery, from which place it was dislodged by the manipulation of the bowel and its mesentery when the abdominal section, which was apparently timely (two hours after the onset of the abdominal symptoms), was performed. The manipulation of the bowel and the mesentery probably forced the embolus back into the aorta, whence it was carried forward into the iliac and femoral artery of the left side, and finally lodged in the popliteal artery where it played further havoc—spasms and pains in the left leg—distal to the femoral artery. It made its presence known as soon as the patient awakened from the anesthetic. Collateral circulation was insufficient to compensate for the loss of the popliteal supply.

The sudden death and the terminal convulsions were no doubt due to the sudden lodgment of an embolus in the brain.

Dissection of the amputated limb showed complete thrombosis of the anterior and the posterior tibial arteries.

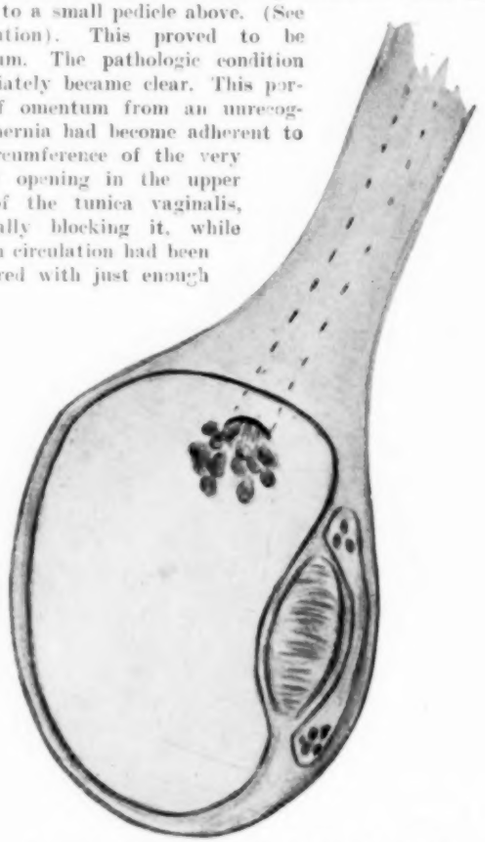
733 Central Avenue.

AN UNUSUAL TYPE OF HYDROCELE

CHARLES A. PARKER, M.D., CHICAGO

The following case of hydrocele appears worthy of record on account of its unusual pathology. The patient was a well-developed boy, 11 years old. He had fallen on the sidewalk a week previously and the next day had observed a swelling of the scrotum, which had increased in size up to the time of his application for admission to the Children's Memorial Hospital. On examination there was found a characteristic painless pear-shaped, fluctuating swelling in the left side of the scrotum measuring about 2½ by 1¼ inches in diameter. A diagnosis of hydrocele was made and an operation advised. The cyst could not be diminished on pressure. There was no history of a hernia and no evidence of one obtained.

At the operation, Nov. 16, 1912, about 2 ounces of a clear amber fluid were evacuated and the cyst was opened. From the upper wall there projected into the cavity a lobulated reddish mass about one-half inch long broadened below and narrowed to a small pedicle above. (See illustration). This proved to be omentum. The pathologic condition immediately became clear. This portion of omentum from an unrecognized hernia had become adherent to the circumference of the very narrow opening in the upper part of the tunica vaginalis, effectually blocking it, while its own circulation had been interfered with just enough



Adherent omental protrusion causing hydrocele.

to stimulate secretion but not to cause gangrene or any subjective symptoms of strangulation. The omentum was loosened and after the hydrocele was disposed of a radical operation for hernia was performed. A much-needed circumcision was also done. Prompt recovery followed.

Fluid in hernial sacs following circulatory disturbances of the hernial contents is the rule, but in most cases the hernial symptoms predominate and no true hydrocele is formed. In the present case the hydrocele was the main feature while the hernia remained obscurely in the background.

7 West Madison Street.

A NEW SUPRAPUBIC DRAINAGE APPARATUS

ERNEST G. MARK, M.D., KANSAS CITY, MO.

It has been my experience that the various devices for permanent suprapubic drainage heretofore presented to the profession have been inefficient, cumbersome and uncomfortable.

After considerable experimentation along this line, I have devised an apparatus which is comfortably borne by the patient and which affords excellent drainage.

It is composed of a colostomy pad through the center of which is placed the short arm of a right-angled German-silver tube. This short arm is divided into two parts fitting into each other by a bevel joint. The distal point is fitted with a shoulder for the attachment of a stiff-walled soft rubber tube which is inserted through the suprapubic wound into the bladder. The long arm lies flush with the outside of the colostomy pad and has a shoulder for the attachment of a tube leading to the leg urinal.

Suprapubic drainage apparatus.

The apparatus is comfortable and can be worn under fairly snug-fitting clothing. It permits of easy cleansing and has the virtue of keeping the patient dry. All in all, it is the most satisfactory appliance for the purpose which I have used.

SYPHILIS OF STERNUM

MAXIMILIAN SCHULMAN, M.D., NEW YORK

Case 1.—A colored man, aged 32, single, steward on a merchant vessel, came to the out-patient department of the House of Relief in August, 1906, complaining of "indigestion" for which he had been treated about eight months without benefit. His family and previous personal history were entirely negative, and may be so assumed, without further detailing. His habits with regard to alcohol and tobacco were moderately good. He did not abuse either. His immediate complaint, which was the same as he had been making for eight months, was of "pain in the stomach." Apart from this and the fact that the pain was not clearly connected with the ingestion of food (either aggravated or ameliorated by it) it was impossible to obtain a history which one could fairly say was not influenced by the questions. In other words, the patient's intelligence was such that his volunteered statements were few and his own observations scanty, while he was readily influenced by the questioner and one could make out any sort of history one chose. Answers to leading questions were misleading. Thus, the determination of a diagnosis had to be based largely on the objective examination. This showed a rather poorly nourished colored man, whose mucous membranes were pale. Temperature, pulse, heart, lungs and general abdominal examination revealed nothing abnormal. In the case of a colored man lues is always assumed as possibly present and it was thought that an aneurysm might be found. A careful search failed to reveal this, but, it was found that a part of the manubrium sterni the size of a 50-cent piece was exquisitely tender. The tender area was quite sharply limited to the lower part of the middle piece of the sternum. There were no evidences of swelling or redness of the tender area. At that time the Wassermann test was not yet available, so that without waiting for further examination as to gastric contents, feces, urine, etc., a tentative diagnosis of gumma of the mediastinal surface of the sternum seemed warranted, and the patient was at once put on large and ascending doses of potassium iodid together with tablets of mercuric iodid, beginning with 1/12-grain three times a day. Within two days marked improvement was reported and at the end of two weeks there were no symptoms of "indigestion" remaining, while the patient began to show distinct improvement in his general condition. The treatment was continued and improvement progressive. I believe that the prompt and continued therapeutic result confirms the diagnosis. Short of a histologic examination of the tissue (and that obviously was impossible) no better diagnostic measure was at the time available. Here then is a case, very probably of syphilis of the inside of the sternum, masquerading for eight months as a case of indigestion. It may be necessary to apologize for the oral administration of mercury. The patient, time and place made other methods impracticable.

Case 2.—E. S., a white man aged 36, whose family history is negative and whose childhood and early adult history are negative, had a mild attack of gonorrhea at the age of 20, for which he was treated several weeks and from which he had no disturbance subsequently. He drinks an occasional glass of whisky and about two glasses of beer daily. This is a rather intelligent and straightforward man, who gives a history as honestly as he can, and insists that he never had syphilis and cannot recall any symptoms suggestive of it. In 1908 he married a frail girl, who in 1909 gave birth to a perfectly healthy child. The mother gained in weight, color and general well-being very markedly, and neither mother nor child has been in ill health (except for measles in the child) up to date. In 1909 the patient was confined to bed for about a week with a typical attack of acute polyarticular rheumatism, which yielded to aspirin and dietary precautions. At the time there was no cardiac abnormality or anything else wrong, outside the arthritis. Shortly after this he moved to Staten Island and remained well until the spring of 1910, when he is said to have had rheumatism again. From this time on he is said to have had frequent attacks of rheumatism, which he usually treated himself, by having the old aspirin prescription renewed. He found it necessary to increase the dosage with every recurring attack. Early in the spring of 1912 he developed "pain in the heart," which refused to yield to the self-administered aspirin. This symptom was severe and at the onset of the attack usually accompanied by a chill. The chills were not of a regular periodicity nor was the patient's blood examined, but a diagnosis of malaria was made and quinin prescribed, with indifferent result. The "pain in the heart" began to manifest itself more and more frequently and to be more and more severe and of longer duration. There were no symptoms of cardiac decompensation, but appetite, which was usually excellent, began to fail, and the general condition to deteriorate materially. The patient became pale and weak, while the pain was exhausting him.

In June, 1912, the patient moved to New York City again, and on June 14, 1912, I saw him at his home in one of his attacks. I found the man extremely pale and in agonizing pain, which he said was "in the heart" and when asked to point to the seat of the maximum pain, he pointed to the manubrium sterni. A complete physical examination revealed a normal temperature, a pulse of 84 which was full and soft, but which showed an occasional extrasystole. At the cardiac apex, which was half an inch to the left of the midclavicular line and in

the fifth intercostal space, there was a clear, moderately high-pitched, systolic blowing murmur, transmitted to the posterior axillary line. Both basic sounds were a little accentuated. Otherwise the heart, lungs and abdomen revealed no abnormalities. A specimen of urine examined the next day was normal. The pain being apparently localized over the sternum, and not transmitted, a possible involvement of the bone suggested itself, in spite of the evidence of cardiac disease and the negative history of lues. With this in view, the sternum and sternochondral articulations were carefully palpated and percussed, with the result that a sharply limited area, about the size of a 25-cent piece was discovered which was extremely sensitive to percussion and even light palpation, though no external evidences of inflammation were apparent. This area was at the right margin of the lower end of the manubrium.

A diagnosis of gumma of the inside of the sternum was made, and the patient was in so much pain that I at once prescribed mercury and iodid, not waiting for a Wassermann examination. The patient was strictly forbidden all other medication and told to report in two days. He reported in ten days, saying that the pain was so much easier after he had taken two doses of the medicine, that he took no more.

The state of affairs was then made clear to him, but he persisted in denying any knowledge of luetic infection, and pointed to his healthy wife and child. He was then instructed to take no more medicine of any kind and to report again in six weeks for a Wassermann examination, when the influence of the couple of doses of medicine would no longer be a factor. This he did, and by then the pain had recurred, though not so severely as formerly.

A Wassermann examination of the blood taken at this time, gave a positive reaction. The treatment was then resumed, with complete alleviation of all pain and marked improvement in the general condition.

Remarks.—Here then is another case of syphilis of the sternum, with no external manifestations and misleading in many ways. I feel sure that these two cases are sufficiently instructive to make reporting them worth while. The interesting features are evident in the clinical histories (though I report them as briefly as possible) and, I believe, need no elaboration. References to gumma of the inner side of the sternum and to the methods of diagnosis are not abundant. Hence my excuse for briefly calling attention to these cases.

229 West One Hundred and Eleventh Street.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

HEDIOSIT.—Hediosit is the lactone or inner anhydride, $C_7H_{12}N_7$, of alpha-glucoheptonic acid, $CH_2OH.(CHOH)_5COOH$.

Hediosit is prepared by treating glucose with hydrocyanic acid, the condensation product being treated with barium hydroxide and the lactone of alpha-glucoheptonic acid liberated by the addition of sulphuric acid. This solution is evaporated and the product is then recrystallized.

Hediosit is a white, crystalline, odorless powder, possessing a sweet taste. It is readily soluble in water, slightly soluble in alcohol and almost insoluble in ether. The aqueous solution is acid toward litmus.

If hediosit be heated with concentrated sulphuric acid, foaming and carbonizing take place with evolution of carbon monoxide.

If 1.0 Gm. of hediosit be heated on a boiling water bath with 1 Cc. of water and 0.5 Gm. of phenylhydrazine, and a few Cc. of absolute alcohol added, a light-colored crystalline mass will form, which after recrystallization from dilute alcohol melts at 172° C.

An aqueous solution (1:19) of hediosit should be clear and colorless and should not be altered by hydrogen sulphide, sulphuric acid, barium chlorid solution or ammonia water.

If 1 Cc. of the above solution be boiled with 2 Cc. of Fehling's solution no precipitate should be formed.

If 1 Cc. of the aqueous solution be warmed with a few drops of ferrous sulphate and of ferric chloride solution, no blue color should appear on acidifying with hydrochloric acid.

If 0.5 Gm. of hediosit be incinerated, no weighable residue should remain.

If 1 Gm. to 2 Gm. of hediosit weighed into a flask be dissolved in 10 to 20 Cc. of water by warming and a few drops of phenolphthalein solution added, 9.1 to 9.6 Cc. of half normal sodium hydroxide per Gm. of hediosit taken should be required to neutralize the solution.

If 8 Gm. of hediosit be dissolved in water to make 100 Cc. and allowed to stand at the ordinary temperature for 24 hours the solution, when polarized at 17° C., should show a specific rotation of about —52° for the sodium line. After neutralization with caustic soda the solution has a slight dextro-rotation.

Actions and Uses.—Hediosit is said not to be poisonous, and when given even to diabetic patients, not to increase the amount of glucose in the urine, but rather to decrease it. A portion of the hediosit amounting to from 10 to 20 per cent. appears in the urine of dogs as an alkali salt. Since hediosit is oxidized in the system it is claimed to have a food value equal to the same amount of glucose.

Hediosit is said to be useful as a sweetener of the food of diabetic patients, having at the same time a certain food value.

Dosage.—From 10 to 30 gm. (3 drams to 1 ounce). Hediosit should not be given to the extent of causing laxative action. It is therefore recommended to prescribe a single dose of 10 Gm. (2½ drams) daily or 10 gm. three times a day every third or fourth day.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst, a.M., Germany (Farbwerke-Hoechst Company, New York). U. S. patent and trademark applied for.

ISATOPHAN.—Isatophan is methoxy-atophan, 8-methoxy-2-phenyl-quinolin-4-carboxylic acid, $CH_3O.C_9H_4N.C_6H_5.COOH$, 8:2:4.

8-methoxy-2-phenyl-quinolin-4-carboxylic acid was described by Doebner (Annalen der Chemie, Liebig, Vol. 249, p. 107), who prepared it by warming together pyroracemic acid, benzaldehyde and ortho-anisidin in alcohol.

Isatophan is a lemon-yellow crystalline powder melting at 216° C., soluble in alcohol and alkalies but insoluble in water or ether. It is tasteless and possesses a slight odor resembling atophan.

If isatophan be dissolved in concentrated sulphuric acid, an orange colored solution results, which yields a yellow precipitate on the addition of bromine water.

If ferric chloride be added to an alcoholic solution of isatophan, a reddish-brown color is produced.

If isatophan be heated above its melting point, carbon dioxid is liberated and methoxy-phenyl-quinolin, a yellow oil, is produced.

Actions and Uses.—Same as for Atophan, but it is tasteless.

Dosage.—Same as for Atophan.

Manufactured by the Chemische Fabrik auf Actien, vorm. E. Schering, Berlin, Germany (Schering & Glatz, New York). No U. S. patent or trademark.

Isatophan Tablets.—Each tablet contains 0.5 Gm. (7½ grains) isatophan.

Therapeutics

PROPHYLAXIS OF MALARIAL DISEASES

Few, if any, of the recent advances in sanitary science have been of greater importance than the methods devised for the diminution and prevention of malarial affections. It is impossible to estimate the economic importance of these diseases in past years. Important extensive public and private work has been greatly interfered with by the prevalence of the disease among workmen, and cities and towns have become unpopular as places of residence after they have acquired the reputation of being malarial locations. By securing control of this disease the accomplishment of important public works has been rendered possible, the cultivation of districts which have been neglected has become practicable, and places of residence which had been partially abandoned have again become attractive.

On this subject Dr. Henry R. Carter, Senior Surgeon, United States Public Health Service, has recently contributed an interesting and important discussion,[1] from which it is proposed to extract some of the more essential facts.

It has already become well recognized that malarial diseases, including under that term intermittent fever, remittent fever and chronic malarial poisoning, are caused by the presence in the blood of a parasite implanted there by a mosquito which has received the malarial infection from the body of a person who is, or who recently has been suffering from the disease. After eight or ten days from the time the mosquito becomes infected he is able to inoculate a human being.

The mosquito which performs this undesirable function of transferring the disease from one human being to another belongs to the genus *Anopheles*, but not all mosquitoes of this genus are engaged in this reprehensible work. As not all mosquitoes are equally guilty of crime, and as certain species might be entirely abolished without affecting the prevalence of malarial infection, it is of no little importance to be able to recognize the mosquito which we have to fear. In regions where malarial affections are present it is not less important to be able to distinguish the mosquito of the genus *Anopheles* from other mosquitoes than to distinguish gray squirrels from chipmunks, or woodchucks from skunks, and it should be an important practical part of the popular biologic teaching in the schools to instruct the pupils in distinguishing between dangerous and harmless varieties of mosquitoes.

In this connection it is stated that "in the female, the sex that bites, the palpi—two little projections on either side of the proboscis—are nearly as long as the proboscis, while in the other varieties the palpi are less than half as long. The males of other species, and anopheles as well, have palpi as long as the proboscis, but in the males they are covered with long hairs and look like plumes. Males of any variety are seldom seen except near the hatching-place, and are very short-lived."

Another point of distinction is that "when resting after a meal of blood the anopheles has her two fore-legs, proboscis, and body all in one line, or nearly so, usually at a considerable angle, from 45 to 90 degrees, with the wall, while other mosquitoes are 'humped up,' both fore and hind legs being bent on the body toward each other. The anopheles is a slight, graceful mosquito."

There are three things to be considered in connection with the transfer of the malarial infection: (1) the person who is or has been affected with the disease; (2) the mosquito which carries the infectious parasite; (3) the person likely to be infected by the mosquito.

Considering first the person who already has the disease and in whose blood the parasites are circulating, certain measures should be taken to prevent the mosquito from becoming infected from him. Every person who is suffering from any of the malarial diseases (with only rare exceptions) should be given adequate doses of quinin to effect a speedy cure. Those who do not avail themselves of this specific treatment but who recover from the acute attack are classed among those known as "carriers." It is common enough to think of the typhoid carrier who disseminates the *Bacillus typhosus* through the community, and also of the patient who has a mild and unrecognized attack of scarlet fever or diphtheria, and who carries the contagion of the disease into schools, churches, trolley cars or stores and so becomes a carrier of the disease. To these and other well-known carriers must be added the carrier of the malarial infection.

It is an obvious fact that a patient who is ill with a malarial disease should be protected from the advances of the anopheles as completely as possible by screening the windows, and by keeping him under a mosquito bar, especially at night. But, because of the difficulty of isolating these patients, and of curing all patients who suffer from any of these diseases, and as many of them walk around where they are surely exposed to the bites of the anopheles, it is not possible by any practicable management to do away entirely with malarial diseases.

Turning next to the second factor, the mosquito, it is necessary to take into account certain facts in its life history.

1. "The female lays her eggs in the shade of grass or bushes on the surface of clear water in swamps, shallow pools, the edges of little streams, etc. She does not like deep water, and the larvae are not found where fish can get at them. They breed especially in water containing green algae, 'frog froth,' and will even breed in rain barrels containing this growth. Otherwise they will not. It is a swamp, not a house, mosquito."

2. "It is from fifteen to twenty-two days, or longer, depending on the temperature, from the time the egg is laid to the birth of the adult mosquito."

3. "The forms between the egg and the mosquito—larva and pupa—live in water but breathe air from the atmosphere and must come to the surface every few minutes to get to it."

4. "These mosquitoes are attracted by light for some distance and are conveyed by light winds." They have been found to be attracted for nearly a mile from their breeding-place to a village brilliantly lighted by electricity, but usually they do not travel more than from a quarter to half a mile, and this distance is modified by the character and direction of the winds. The female anopheles is active almost exclusively in the evening and at night. The bite is not nearly so painful as that of the day mosquito, and the insect is so shy that she rarely bites a moving person, one who is awake. Consequently, anopheles frequently exist where there are no complaints of mosquitoes. "The female anopheles comes into the house at night, attracted by light (and possibly smell), feeds, and if not exceedingly full, leaves as soon as it becomes light," or, if she cannot leave, hides in some dark place through the day.

As it is practically impossible to abolish any pest as prolific as flies and mosquitoes by killing the individuals, it is necessary to turn to the breeding-places and endeavor to abolish these so as to prevent breeding. Following out this principle it becomes necessary to drain swamps, marshes and damp and watery places, and to clear up the banks of streams. This may sometimes be done by the digging of ditches, but this is far inferior in usefulness to draining by underground drains of tile. Where ditches are dug there is still opportunity for the development of the mosquito in the grass and weeds which grow on their borders. Swamps and other damp places having been done away with, it is necessary to prevent the development of the embryonic forms on the surface of the water, and this may be accomplished by placing a thin layer of coal-oil on the surface of bodies of water where the mosquito is undergoing development. This forms a film on the water through which the larvae cannot pass to obtain air, and consequently they die. This of course is not practical on large ponds. Furthermore, when bodies of water contain fish there is

1. Carter, Henry R.: Pub. Health Rep., Dec. 6, 1912, p. 2024.

less need of adopting these measures, because the fish consume the larvae.

It is seen, then, that it is impossible to isolate all persons who are infected with the malarial parasite, and it is also evident that it is impossible thoroughly to do away with all of the anopheles mosquitoes, under ordinary circumstances. Hence it becomes necessary to consider the third factor in the spread of the disease, the person who has not been infected, but who is likely to be.

When the breeding-places are known, and when they cannot be sterilized with reference to the danger from the mosquito, something can be accomplished by planting hedges between the breeding-places and the residence, which act, perhaps by shutting off the light which attracts the mosquitoes, and also by stopping those mosquitoes that are being carried by the wind. It is desirable to do away with weeds and shrubbery about the house as far as possible, for these form resting-places for the anopheles during the day. Trees which are high and whose branches grow from the trunk at a considerable elevation do not seem to afford a resting-place for the mosquito, under ordinary circumstances. Vines and bushes close by the house, such as rose bushes and grape vines, which are frequently set out close to a piazza to afford shade, should be removed in malarial regions.

From the point of view of malarial infection it is to be desired that piazzas and awnings should be without vines and shrubbery. The main defenses, however, against the anopheles are screens and mosquito bars. In malarial regions houses should be thoroughly and constantly screened. As few entrances as possible should be used, and artificial lights should be placed where they will not shine on these entrances. The doors should be opened as little as possible to allow ingress and egress, and they should be equipped with a strong spring, to ensure quick and complete closure. If the light shines on the door, the mosquitoes are attracted to it, and enter when it is opened; as few go out they accumulate within the house and are confined there.

Still another measure having reference to the still uninfected person is the prophylactic use of quinin. While the efficiency of this does not seem to have been definitely proved, the experience in several localities, particularly of the Japanese in Formosa, and the Germans in East Africa, gives strong presumptive evidence in its favor. This drug may be taken in doses of from 3 to 5 grains every day, or a single dose of 10 or 15 grains once a week. Both methods seem to be effective, the latter slightly more so.

The preventive measures which should be used in the prophylaxis of malaria may, then, be summed up as follows:

1. Cure every patient as rapidly as possible, and while he has the infection isolate him from mosquitoes.

2. Prevent as far as possible the development of the anopheles mosquito by destroying the breeding-places by draining, and the hiding-places by removing weeds and shrubs. Aromatic trees and shrubs seem to be offensive to the insect and may be permitted.

3. Screen the houses so that no mosquitoes may enter to bite the occupants while they are asleep.

4. If the preceding three measures cannot be carried out completely, administer prophylactic doses of quinin to every person. While not preventing infection this will prevent the development of the parasite in the infected person.

DISTURBANCES OF THE HEART

(Continued from page 445)

CARDIOVASCULAR-RENAL DISEASE

The name "cardiovascular-renal disease" is so suggestive of the exact condition in many instances that it has come to be used as a distinct name for the disease of these three parts of the organism, the name representing the pathology and the prognosis. It is impossible to tell which of these three parts of the organism will become pathologically the most diseased before the patient succumbs. "Bright's disease" is the old name for this condition, but it was used by Bright and is now used by clinicians as a more distinctive term for chronic interstitial nephritis. No patient dies of Bright's disease, however, without having more or less chronic endarteritis and more or less hypertrophy and subsequent chronic myocarditis and dilatation of the heart.

In cardiovascular-renal disease it is often doubtful for a long time whether the patient will finally succumb to cardiac disability, to apoplexy from diseased arteries, to a general serious arteriosclerosis, possibly coronary disease, or to uremia from chronic interstitial nephritis. It is also many times impossible to determine where the general disease first started. The beginning may be chronic endarteritis with preceding hypertension, or a slowly developing chronic interstitial nephritis or cirrhosis of the kidneys; in some instances an insufficient heart may cause such irritations of the kidneys from chronic passive congestion that they become cirrhotic. A more serious passive congestion of the kidneys may occur from an insufficient heart, with profuse albuminuria, all kinds of casts, and finally kidney insufficiency, without developing real chronic interstitial nephritis or the small contracted kidney before death occurs.

Cardiovascular-renal disease generally begins insidiously, with the first indication prolonged hypertension with the symptoms described for that condition. Interstitial nephritis also is always insidious in its development, and for months there may be nothing abnormal in the urine. Whether the hypertension and later chronic endarteritis is the primary lesion, or whether the slowly developing interstitial nephritis is the primary lesion, in which case there is also hypertension, the left ventricle will hypertrophy to overcome the increased resistance in the arteries. This hypertension, this beginning chronic endarteritis, this beginning chronic interstitial nephritis, and this hypertrophy of the left ventricle may all occur without any symptoms at all, and the condition is often discovered only on insurance examination, the man considering himself perfectly well. The insidious beginning of this serious disease should therefore cause careful examination of patients who present themselves for some apparently simple functional disturbance, if the patient is over 40, when this disease is most likely to occur.

The diagnostic symptoms are hypertension and slight enlargement of the heart. The urine may or may not aid in the diagnosis. The absence of albumin and even the absence of casts is no indication that chronic interstitial nephritis has not begun. If the kidneys are suspected, frequent examinations should be made of the urine passed early in the morning, after meals and after exercise; a quantitative test of the twenty-four hours' urine for the excretion of the different elements will often disclose an insufficiency in excretive power. The amount of urine passed by these patients is generally large, and the specific gravity low.

An early diagnosis of this disease, and the proper management of the patient, may mean several years of life to the patient.

The symptoms of the beginning of this disease are those already mentioned under the subject of hypertension, and in its incipiency it is hypertension. The various rules and regulations laid down for the management of a patient with hypertension are the very methods of treatment for a patient who has actually begun to have cardiovascular-renal disease. If albumin and casts, or either, are found in the urine, the diet must be more carefully regulated than in hypertension without such signs of renal disease, and the treatment becomes that laid down for Bright's disease or chronic interstitial nephritis. If the blood-pressure is nearly 200 or over 200 mm., it is almost indicative of interstitial nephritis, even if the urine, on repeated examinations, is absolutely negative.

As previously stated, the heart, sooner or later, from hypertension, endarteritis, interstitial nephritis, or from any combination of these conditions, will hypertrophy. The heart will be able to overcome the increased blood-pressure for a shorter or longer time, depending on the age of the patient, the previous health of the myocardium, whether or not the patient's general condition (i. e., his nutrition) is good, and whether or not the kidneys are seriously damaged. Sooner or later, however, the left ventricle generally fails, if the patient does not die intercurrently of an apoplexy, an angina pectoris or uremia. The gradually dilating left ventricle begins to give more and more symptoms of insufficiency, and finally, if the dilatation is considerable, the symptoms are the same as they are in valvular disease with loss of compensation. Pendent edemas, more or less serious, develop; there is more or less dyspnea, and albumin, at this period, is pretty sure to be present in the urine, often in large amount. Besides all the disturbances due to the insufficiency of the heart, the two main disturbances, chronic nephritis and myocardial degeneration, progress together.

Not infrequently it is difficult to determine which condition is the more serious at a given time with a given patient, whether it is the failing heart that has made the kidneys worse, or whether the kidneys are on the point of secreting totally insufficient urine both in amount of liquid and in amount of salts, and uremia is imminent. The clue is often given by the edema being pendent, mostly in the feet and legs, gradually coming into the genitals, with possibly ascitic fluid in the peritoneal cavity and with but little puffing or swelling of the hands and face, all of which is indicative of heart failure. Signs of impending uremia are more general edemas, including the hands and face, nausea, vomiting, headache and drowsiness; or, on the other hand, muscular twitchings and sharp neuralgic pains, as indicative of possible convulsions.

It is beyond the scope of this article to treat chronic interstitial nephritis or Bright's disease. The endeavor to prevent this finale of cardiovascular-renal disease has been sufficiently described under hypertension. If cardiac failure occurs, it should be noted that sufficient doses of digitalis may reestablish the power of the left ventricle and remove temporarily, at least, the beginning edemas. On the other hand, if the kidneys are seriously damaged, suppression of urine may occur under full doses of digitalis, and uremia may be precipitated. It is therefore necessary to make a careful decision on the totality of the above-mentioned symptoms to determine if possible whether digitalis to the physiologic effect should be given, or should not be used at all. Very small doses are unsatisfactory in this condition; very large doses are inexcusable; but good full-sized doses to help the heart, if possible, are often justifiable and valuable. The salt-free diet is often indicated, and may do good in preventing and reducing edema.

The Nauheim baths, with sodium chlorid and with carbonic acid gas, are not always efficient in reducing blood-pressure, and may even do serious harm in cardiovascular-renal disease. Sometimes they raise blood-pressure. If it is decided to try them, the patient should be carefully watched after the bath to see whether he is benefited or injured.

Unless the kidneys are in serious trouble and the patient is almost uremic, when the heart fails the blood-pressure is generally much lowered from what it has been, and this is another indication for digitalis.

Patients who have become ill enough to remain in their room or perhaps in bed with this disease are likely to be sleepless and require hypnotics, and it should be remembered that nothing repairs the heart more than good sleep. The hypnotic selected should not be one that would seriously weaken the heart, but almost any of them may be used intermittently, perhaps, first one and then another. If the patient's heart is very weak, even if the kidneys are seriously damaged, there is sometimes nothing more safe than a small sleeping dose of morphin. It is contrary to the general belief and general teaching, but from the cardiac point of view it is the safest of the hypnotics, and from the kidney point of view it generally does as little harm as any other.

If the patient has not reached the point in this disease just described, or if he has had an exacerbation of the trouble and has become improved, he should never think of returning to his active life. If possible, he should go to a warm climate during the cold weather. He should make up his mind that his activity is over, and that his whole time should be spent in prolonging his life by the easiest possible regimen laid down for him, depending on the condition of his kidneys on the one hand and his heart on the other. The diet depends on which part of his disease is the most in evidence; if his heart, the diet should be that previously described under myocarditis and high blood-pressure; if his kidneys, that for chronic nephritis.

(To be continued)

Gelatin in Acute and Chronic Suppuration.—V. Miehl calls attention to the remarkable transformation he observed in a number of cases of acute and chronic suppuration, especially the pyemic form, when the patients had been given gelatin. He is an army surgeon and has been using this method for three years and with almost invariable success. He has the patient fed with a jelly made with 10 gm. gelatin to 100 or 120 gm. water; after dissolving, the whole is boiled for a minute or two and then sweetened and flavored with lemon juice. This portion is taken during the day. He is convinced that many otherwise doomed patients with puerperal septicopyemic processes might be saved by this means. Its action seems almost specific in thrombophlebitis, he says, and in two cases of paratyphoid with venous thrombosis and pyemia the effect was equally prompt and favorable, as also in a case of post-partum endometritis with occasional chills for three days. He always gives the gelatin as a preliminary to operations when there is reason to suspect hemophilia, and also with compound fractures. In his recent communication on the subject in the *Wiener med. Wchnschr.*, 1912, lxii, 1763, he states that compound fractures treated locally with Peruvian balsam and gelatin taken internally healed without the slightest inflammatory reaction.

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THE CENTRAL NERVOUS SYSTEM AND HEAT REGULATION

There seems at present to be no escape from the conclusion that the temperature regulation of the body is under the dominance of some mechanism connected with the central nervous system. Physiologists are still somewhat divided in their acceptance of the existence of a special cerebral heat-regulating apparatus composed of heat centers and heat nerves. Conservatism in regard to the actual location of a heat center in the brain is assuredly justified; for the evidence of any narrow circumscribed anatomic area devoted to thermoregulatory functions is far from convincing. On the other hand, there can be little hesitation in admitting that in the physiologic sense some coordinating mechanism or "center" controls the various heat-producing and heat-dissipating devices of the body so that the vasomotor responses of the skin, the sweat-secreting glands, the chemical combustion processes in the muscles and the respiratory factors all work in harmony to effect a single result: temperature equilibrium. After destruction of the brain all of this splendid adjustment is lost. Furthermore, in certain diseases of the central nervous system unattended with infectious agents and their toxic products or with muscular manifestations such as convulsions, a rise in temperature is observed. Brain tumors may lead to such symptoms.

Despite the apparent complexity of all the functions that may be concerned, it is evident that the central nervous system is the thermoregulator of the organism. The normal response to external cold seems to be effected in a reflex way through the intermediation of the nervous regulator, the muscles and glands being awakened to an unusual activity with consequent heat production. When there is a tendency toward a rise of temperature, on the other hand, the warmed blood stimulates the central thermoregulator to a response which results in dilatation of the cutaneous blood-vessels, sweat secretion, and occasional heat dyspnea with heat loss. If, then, the nervous system ordinarily reacts to reflex impulses or to blood of abnormal temperature circulating through it in health by diverse responses which serve in the end to maintain a uniform temperature, in fever a somewhat different situation appears to arise. The compensatory loss of heat is not adequate. By this it must not be assumed that the capacity for heat regulation has been completely lost; but the heat-regulating center — the nervous thermoregulator — has been upset by the pathologic condition so that the adjustment between heat loss and heat production takes place at a new temperature level. The toxic products responsible for infectious febrile processes presumably poison the centers so that they no longer respond adequately to the same temperature as under normal conditions of health. There is still some compensating response as a rule; otherwise the rise in body temperature would continue beyond the limits of physiologic endurance.

It is well known that certain regions of the central nervous system, notably in the corpus striatum, have been associated with heat regulation in the so-called "heat puncture" experiment. Mechanical or electric stimulation of this region is followed by a rise in temperature. The interesting question has obviously arisen whether or not the corpus striatum in the region of the usual puncture is capable of response in the way of thermoregulation not only to injury or irritation but also to alterations in environmental temperature. The experimental logic of the situation would demand a temperature-lowering response to warmth applied to the brain center and a febrile response when cold is applied. This is precisely what has been found by Prof. H. G. Barbour in a series of ingenious experiments on animals.[1] A small metallic device permitting a circulation of water through it was permanently inserted through a trephined opening of the skull into the region where the heat puncture can be effected. The temperature of the animal could be manipulated in a most striking way by the temperature to which the circulating water in the apparatus was subjected. Heat thus applied locally to the brain centers acted as an antipyretic, and, conversely, cold induced hyperpyrexia. Peripheral vasoconstriction and vasodilatation were correspondingly influenced. There were limits of locally applied temperature alterations beyond which the appropriate responses could no longer be invoked. The limiting figures are 33 and 42 C. (91.4 and 107.6 F.), respectively.

The description of some of the actual phenomena is quite graphic. When the puncture fever is induced in rabbits the ear vessels are usually completely contracted as the outcome of the mechanical irritation of the brain centers. The ears feel cold. As soon as warm water is circulated through the apparatus implanted in the brain a sudden change ensues. The ear-vessels dilate and fill with blood and they feel warm to the touch. The response is precisely like that which follows the immersion of an ear in hot water.

This interesting study from the Vienna Pharmacologic Institute will serve to direct attention more clearly

1. Barbour, Henry Gray: Die Wirkung unmittelbarer Erwärmung und Abkühlung der Wärmezentra auf die Körpertemperatur, Arch. f. exper. Path. u. Pharmakol., 1912, lxx, 1.

to the importance of the central nervous system in the regulation of temperature. In the pharmacology of the familiar antipyretics it is already well appreciated that these drugs may advantageously be regarded as narcotics for the overstimulated heat-regulating centers.[2] These are only a few of the diverse manifestations of normal and pathologic temperature regulation in the organism which deserve a thorough scientific investigation. If there is a clearly definable thermoregulator in the body, its functioning deserves to be known with great precision. Certain therapeutic procedures which have come into use in the management of febrile conditions are still the subject of vigorously conflicting arguments. One need only mention the divergent views respecting the employment of antipyretics and cold baths. What is called for to-day is a more intelligent appreciation of the physiology and pathology of temperature regulation to serve as a critique of blind empiric propaganda and practice.

THE GRADES OF MILK

The question of sanitary milk and its relation to the public health challenges the best endeavors of those who have responsibility for the bodily welfare of the American people. There is available to-day, at all events in the larger cities, milk sold under a great variety of designations, and the time has come when these should bear some definite import and carry the same responsibility for truth that is enforced in the designation of other food materials. In other words, there should be a defensible classification of milk offered for public sale.[3]

The qualities of milk now commonly distributed have the designations and presumable standards as follows: 1. Certified milk with a bacterial count below 10,000 per cubic centimeter. The licensing of such supplies is not uniform in various localities. 2. Inspected milk, with a count below 100,000. 3. Pasteurized milk, subjected to heat under varying conditions of uncertain efficiency. 4. Raw market-milk. By far the largest amount of milk sold is market-milk, either raw or pasteurized. A careful study of each of these grades of milk with a determination of their exact status from sanitary, bacteriologic and food-value points of view would be desirable.

Recently Dr. Edwin H. Schorer[4] has made an elaborate study of the classes of milk supplied to the city of Boston. Since these may be looked on as fairly representative of the milk-supply in various parts of the country we shall quote liberally from his findings. As might perhaps have been expected, variation in the imperative cleanliness and other conditions in the production and pasteurization is so marked that even certified and pasteurized milks are variable and their bacterial count cannot be foretold. Inspected milk, in the production of which the chief emphasis is put on sanitary dairy conditions, sterilized containers and temperatures below 50 F., is apparently more uniform in numbers and kinds of bacteria. Schorer contends that it is relatively easy to produce milk of low bacterial content, but the greatest care must constantly be exercised to prevent occasional high counts. The better classes of milk now contain little sediment, market-milks containing more dirt but fewer cells than certified milks. Cream on rising carries with it a large portion of the bacteria in milk. Separator cream does not take with it so large a portion of the bacteria as does gravity cream. It is interesting to note that coagulation occurred as soon after delivery in pasteurized market-milk as in raw milks. Certified milk coagulated at a lower acidity than did the other grades, but it took longer to get the coagulating acidity.

One of the objections to pasteurized milk has been the alleged predominance of putrefying bacteria owing to the readier destruction of their acid-producing antagonists by the heat applied. It appears, however, that the fear of putrefying organisms is not warranted as far as market-milk pasteurized by the holding process is concerned. Certified milk, because it contains little cow-manure, is infected principally with spore-bearing organisms, is always well refrigerated, and contains as large a percentage of protein-digesting and no more acid-forming bacteria than does pasteurized milk.

Contrary to what might be expected, certified milks generally have highest bacterial counts in the fall and winter. Schorer is inclined to attribute this to the fact that the necessity of carrying milk through the cold air to the distant milk-house makes the milkers loath to wash their hands before milking each cow, and that winter weather generally interferes with the rigid technic of certified farms. The higher counts in ordinary market-milks during the summer are probably due as a rule to poor refrigeration, especially at the period in the spring when winter methods are no longer efficient. Like the "man behind the gun" in warfare, so in the dairy industries the real worker is the one on whom above all others the possibilities of wholesome milk depend. Recall the words of Shakespeare: "She can milk; look you, a sweet virtue in a maid with clean hands."

DIGESTIBLE BREAD AND NEWSPAPER FAKES

It is with considerable reluctance that we refer from time to time to exaggerated statements appearing in the newspapers and purporting to present some discovery of supposed interest to the medical profession and incidentally to the layman. Our duty is not primarily centered in the reform of the public press, despite its many past offenses in matters that concern the welfare of the public quite as much as they concern the welfare of the physician who protests against them.

2. Compare Meyer and Gottlieb: Experimentelle Pharmakologie, Ed. 2, p. 417.

3. Melvin, A. D.: The Classification of Market Milk, Bull. 41, Hyg. Lab., U. S. P. H. S., 1908, p. 559.

4. Schorer, E. H.: Experimental Studies on Milk, Jour. Infect. Dis., 1912, xi, 295.

Now and then, however, we feel compelled to notice some fraudulent claim or intentionally or unintentionally misguiding pronouncement which steals its way into publicity in the guise of a "rare discovery" that has "startled scientists" and furnished the secret of health or the cure of insidious disease. An instance of this appearing in the Philadelphia *North American*[1] has lately been brought to our attention by several correspondents from various parts of the country. The statements involve the alleged discovery of a "way to make bread that is digestible," the solution of the "problem that puzzled scientists and made dyspeptics" being the work of one Mrs. Lydia Sharpless. The honored names of Dr. Weir Mitchell of Philadelphia, referred to as the "famous originator of the 'rest cure,'" and of Professor Edward T. Reichert of the University of Pennsylvania Medical Department are freely and skilfully used in advocacy of the new Sharpless bread (manufactured in Philadelphia!). The reader of the article is shown a word-picture of the dire effects of ordinary bread which is stated to contain so much raw starch as to make it utterly indigestible. Dr. Reichert is quoted as saying:

"Bread is one of the chief causes of all digestive troubles. Intestinal fermentation and the poisons born of such a condition cause no end of illness, especially among children. Yet who ever thinks of bread as being the offender? No one denies a child bread, especially if the bread be well baked or a day or two old. Still, the raw starch-grains are there, and they are almost sure to cause trouble. That is why crackers are so harmful for children. All the starch in them is raw. And toast or zwieback is good for children or invalids, because in these twice or thrice baked forms of bread many of the starch-granules are transformed into dextrin by the additional heat."

The Sharpless bread, thanks to the new Lydia—a name to conjure with in medicine—is mixed, not kneaded, so that "90 per cent. of the starch-grains are gelatinized," whereas, on the alleged authority of Professor Reichert, in the average wheat bread 90 per cent. of the starch-grains are raw. Analyses published in the columns of the *North American* and purporting to come from "one of the best food chemists in Philadelphia" show a surprising agreement between the Sharpless bread and kneaded bread except in the very large content of soluble carbohydrates (19.1 per cent. of dextrin, soluble starch and sugars) in the new variety. "These carbohydrates," the statement continues, "are the active nutrients and their excess in the Sharpless bread indicates the food or calorific value to be more than double that of the hand-made (kneaded) bread; hence, one pound of the former is worth more than two pounds of ordinary bread as life-sustaining food."

This apparently plausible story of the addition "of at least 100 per cent. to the nutritive value of bread" has been widely circulated, as our correspondence indicates. It matters little that a semiveiled retraction of some of the misleading statements was published a few days later[2] in the *North American*. The damage had been done. Hundreds of credulous and well-meaning laymen and not a few physicians were beguiled into the belief that the "staff of life" is indigestible. Since Professor La Wall has shown by means of tests that, so far as the gelatinization of the starch is concerned, there is no material difference between ordinary baker's bread and Sharpless bread, Professor Reichert has admitted that the facts and figures contained in his former statements were based on tests made fifteen years ago and on a government bulletin issued in 1896. Reichert is now quoted as having changed front and as authorizing the statement that "what Mrs. Sharpless has accomplished is also being done by all our first-class bread and cracker bakers." This change of base, however, comes too late to affect the situation materially. Lydia Sharpless and her bread have been advertised. To add to the irony of the situation, the readers are now told that white bread has long been free from raw starch, but that the doctors didn't know it. And then, with grim humor, "the world moves on, even though science sometimes be caught asleep at the switch."

We need not detail the inconsistencies of the new claims quoted above—as to how, for example, starch can at the same time be "gelatinized" and soluble; or as to the ridiculous contentions regarding the identity of soluble products and nutritive value. Or are we to assume that cooked, insoluble foods, like meat and eggs, are unavailable? In truth there are few foods about which such extensive, reliable, easily accessible and popularly presented data exist as are published regarding the nutritive value of bread. Upward of 100 digestion experiments have been made by the Maine and Minnesota experiment stations alone,[3] with young, healthy men, with bread from different grades of flour ground from hard and soft wheats from Indiana, Michigan, Minnesota, Dakota, Oklahoma and Oregon. The results of these experiments give definite information to the effect that bread made from standard patent wheat flour—and that is the variety here involved—is among the most digestible of all foods and worthy of the important place that it holds in the dietary. The reports invariably show a utilization of approximately 98 per cent. of the car-

1. The articles in question, under the authorship of Leigh Mitchell Hodges, appeared in the issues of Jan. 6 and 25, 1913.

2. Jan. 25, 1913.

3. Snyder, Harry, and Voorhees, L. A.: Studies on Bread and Bread-Making, U. S. Dept. Agric., Office of Experiment Stations, Bull. 67, 1899. Woods, Charles D., and Merrill, L. H.: A Report of Investigations on the Digestibility and Nutritive Value of Bread, U. S. Dept. Agric., Office of Experiment Stations, Bull. 85, 1900; Studies on the Digestibility and Nutritive Value of Bread at the Maine Agricultural Experiment Station, 1899-1903, U. S. Dept. Agric., Office of Experiment Stations, Bull. 143, 1904. Snyder, Harry: Studies on Bread and Bread-Making at the University of Minnesota in 1899 and 1900, U. S. Dept. Agric., Office of Experiment Stations, Bull. 101, 1901; Studies on the Digestibility and Nutritive Value of Bread at the University of Minnesota in 1900-1902, U. S. Dept. Agric., Office of Experiment Stations, Bull. 126, 1903; Studies on the Digestibility and Nutritive Value of Bread and of Macaroni at the University of Minnesota, 1903-1905, U. S. Dept. Agric., Office of Experiment Stations, Bull. 156, 1905. Atwater, Helen W.: Bread and Bread-Making, U. S. Dept. Agric., Farmers' Bull. 389, 1910.

bohydrate, without any of the subtle Sharpless devices to increase its nutritive value in this direction.

It is unquestionably true that "raw" starch is comparatively indigestible and may be a source of intestinal irritation. From the foregoing it must be obvious that the common type of bread is not a mixture of unchanged starch-grains. The carbohydrates of flour undergo both physical and chemical changes in bread-making. Not far from 6 to 8 per cent. of the insoluble starch is changed to soluble forms, while the combined action of the ferments and heat ruptures a large portion of starch-grains, rendering them more susceptible to further changes.[4] The American studies further show a comparatively small amount of residual available energy in the feces from bread made from patent flour (in contrast with whole wheat and graham bread). Even when 20 per cent. of starch was added in the making of the bread, Snyder[5] found the "coefficient of digestibility" of the carbohydrate to remain at 98 per cent. From the point of view of digestibility, fine flour is preferable to coarse flour; but the microscopic studies of Moeller[6] led him to the conclusion that healthy persons digest the starch of cereals and potatoes almost completely, even when the starchy foods are not in a favorable mechanical condition, as is the case in the bran from cereals, in rice and in sliced potatoes. We maintain that the doctrine of the indigestibility of bread by healthy man is a pernicious and unjustifiable fake.

PHYLACOGENS AGAIN

Our practical knowledge of immunity in infectious diseases and of the methods of prophylaxis and cure has advanced greatly during the past ten years. The results of the prophylactic immunization against typhoid and of the treatment of certain cases of furunculosis are familiar examples of what may be accomplished by active immunization with preparations of bacteria commonly known as vaccines. Definite and favorable results have been obtained by the use of vaccines prepared from the organisms concerned in various other acute and chronic infections. The results from the use of vaccines have appealed to physicians generally, and the use of vaccines in many infections has become more and more widespread. Vaccines for these inoculations are supplied by the biologic departments of drug houses, and the preparation and sale of these products have come to occupy a prominent and in all probability a remunerative department, if we may judge by the space devoted to their advertising.

The thinking physician knows, however, that the treatment of infection with vaccines requires careful attention and thought, together with a study of the clinical and pathologic conditions of the individual case, and that unless this requirement is met, more failures than successes follow. We do not enter here into a discussion of the relative merits of stock and autogenous vaccines, or into the question as to what combination of mixed vaccines may be desirable. We assume that the average physician is doing his best with products supplied by the laboratories and that he has not the facilities for the preparation of autogenous vaccines. Under these conditions the problem of obtaining results is difficult enough, and the physician does not have to go far before he finds that even with the most painstaking work he is often unable to accomplish the cure of the infection in question, the consequence being that at present vaccines are discredited by many physicians.

And now the physician is asked practically to disregard the little knowledge he already has of the mechanism of infection and inject into his patients a mixture of toxic bacterial derivatives, called Phylacogens, and see what will happen. Something usually does happen, and the patient has good reason to remember the experience of the chill and violent constitutional symptoms that follow the injection. It hardly seems possible that physicians of experience ever would countenance the injection of such toxic substances into patients already overwhelmed with the poisons of infection, such as that by the streptococcus in erysipelas or the pneumococcus in pneumonia.

To complete the list of Phylacogens so that the busy practitioner need not waste his time in thought, provided he is unable to determine on clinical grounds the nature of the illness in his patient, he is provided with Mixed Infection Phylacogen, a preparation which has the merit of covering the ground, but only so far as name is concerned. We are inclined to look with pity on the polypharmacy of earlier centuries in medicine, and yet in this day of research into the specific causes of infection and of specific treatment we are asked to introduce into patients suffering from a known infection a mixture of many toxic substances, the action of no one of which is understood. This is an utterly irrational procedure, without any semblance of adequate experimental and theoretical basis, and in the end it will work great harm to the cause of legitimate and rational vaccine therapy, to say nothing of the harm inflicted on the innocent patient.

RESECTION OF THE SMALL INTESTINE

Experimental surgery on animals has contributed many useful suggestions and led to numerous corrective technical applications in the domain of human practice. This is particularly true in the field of gastro-intestinal surgery, which has already attracted a number of competent experimenters. It is important for every operator to know to what extent he may be justified in the removal of organs or tissues, and what responses may be expected from the resection of various parts. A model study of the effect of extensive resection of the small intestine has been published by the professor of sur-

4. (See Note 3) Snyder, H., and Voorhees, L. A.
5. (See Note 3) Snyder, H.: Studies on Bread, Bull. 101, p. 51.
6. Moeller: Ztschr. f. Biol., 1897, xxxv, 291.

gery in Yale University, Dr. J. M. Flint.[1] He has found that as much as 50 per cent. of the total small intestine in dogs may be removed without fatal results. The animals may gradually return to a condition of practically normal weight and metabolism when maintained on a favorable diet under good conditions. Resections of 75 per cent. and even more of the total small intestine may be survived, but such animals are not liable to show a true recovery, as evidenced by a return to normal weight with the establishment of a good compensatory process.

The symptoms manifested by Flint's animals were at first a severe diarrhea, ravenous thirst and appetite, and loss of weight from which they gradually recovered in most cases. Such individuals remain, however, extremely sensitive to unfavorable conditions of diet and living. Metabolic studies, conducted by Professor Underhill on the animals, show that there is a marked increase in the alimentary loss of the foodstuffs, reaching at times as much as two-thirds of the diet content. By diminishing the absorbing surface of the intestine, the resection of large amounts of the intestine disturbs the balance in the absorption of protein and fat products, leading to the excessive excretion of these in the feces. This accounts for the profuse diarrhea invariably observed after the operation. The unsatisfactory utilization of ingested foodstuffs, owing to the limited surface for absorption, forces the subjects for a time to consume their own tissue stores. There is a gradual restoration of the power of absorption, and ultimately the compensatory mechanism is apparently effectual under suitable conditions of feeding and environment; but the result is by no means so satisfactory as the power of absorption of the normal intestine. In explanation of the increased intestinal putrefaction observed under the conditions of the shortened intestine, it is suggested that the food residues now are forced to remain longer than ordinarily in the large intestine, the seat of the action of bacteria.[2]

With the establishment of a compensation in the intestine on a rich, easily assimilated diet, digestion may again proceed as in the normal, except for an increase in the amount of intestinal putrefaction. The carbohydrates may now be absorbed to an extent considerably above the usual, and herein lies a guide to the dietetic management in human cases. The clinical manifestations of the metabolic disturbances, caused in many by an abbreviation of the intestine, consist largely in a diarrhea which, in the majority of instances reported, was only slight in degree. The stools were often fatty in character, indicating the inability of the patient to absorb the dietary fats. Here, too, the limited experience which has been recorded reaffirms the observations on animals, and indicates the value of easily utilizable carbohydrates like the simple sugars, with a restriction of the fats in the diet of these patients.

In general the response to injury or destruction of organs or tissues may be met by several compensatory processes, of which the regeneration of the lost or injured portion represents the most perfect type of compensatory action. Instead of this a hypertrophic process may result either in the remaining portion of the organ or tissue, or sometimes in its mate in case the structure is bilateral. After the resection of portions of the small intestine the compensatory process consists, according to the illuminating morphologic investigations of Flint,[3] in a hypertrophy as well as a hyperplasia of the remaining portion of the small intestine. There is no regeneration of either the villi or the crypts. Computation makes it probable that in favorable cases approximately the original epithelial area of the intestine is restored by the hypertrophic process.

Despite this promising outcome in the experimental trials the prognosis in human cases should be guarded, as Flint properly emphasizes. The histories of the cases reported show that after apparently successful resections the patients, for lack of suitable compensation, may succumb ultimately to a slow process of inanition. The metabolic disturbances in the human cases recorded appear to bear no definite relationship to the amount of small intestine resected. A method of fractional resection might lead to more satisfactory outcome. At present the results of the primary operation are affected by the most diverse factors, such as the age and condition of the subject, the actual length of the intestine and the difficulties in measurement, and the functional efficiency of the mucosa. The animal experiments as well as the human cases emphasize the specific function of the three segments of the gastro-intestinal tract. Neither the stomach nor the colon is able to compensate for the loss of large portions of the small intestine. The surgical rule has been, and will continue to be, the removal of the minimum amount of the intestine permitted by the morbid condition; and the prognosis will depend chiefly on the factors already discussed. The dietary suggestions afforded by the nutrition investigations in relation to the shortened alimentary tract are certain to be helpful in facilitating a satisfactory outcome.

1. Flint, Joseph Marshall: The Effect of Extensive Resection of the Small Intestine, Bull. Johns Hopkins Hosp., 1912, xxiii, 127.

2. Compare Erlanger, J., and Hewlett, A. W.: Am. Jour. Physiol., 1901, vi, 1

3. Flint, J. M.: Tr. Conn. State Med. Soc., 1910, p. 283.

Current Comment

MEDICAL EDUCATION IN ILLINOIS

The rapid progress made in the development of medical colleges in other parts of the country has brought out in strong contrast the great need for improvements in Illinois, which means Chicago. At present there are only three medical colleges which are a credit to the state of Illinois or to the city. Two of these, the Northwestern University Medical School and Rush Medical

College (the University of Chicago), have kept pace with modern improvements and are in the highest rank (Class A plus). The College of Physicians and Surgeons, although at present in the second class (Class A), has recently become part of the University of Illinois and it is to be hoped that through the adoption of higher entrance requirements it may soon be worthy of admission to the highest rank. Aside from these three colleges Chicago has no medical school worthy the support of the profession or of recognition by the public. In the third class (Class B) are the Bennett Medical College, Chicago College of Medicine and Surgery and Hahnemann Medical College, while in the fourth class (Class C) are the Jenner Medical College and Hering Medical College. The last-named has been reported not in good standing by the Illinois State Board of Health. The continued existence of these low-grade schools really hinders the improvements in medical education in Chicago which otherwise might be possible. At present such schools are prospering because the better schools have adopted and are requiring higher standards of preliminary education. Hundreds of students each year who, because of their inferior training, cannot enter, or are refused admission to the high-grade colleges, easily gain admission to the low-grade institutions. As long as the latter exist, therefore, it will be possible for uneducated men and women to enter on the study of medicine and later become physicians. This condition of things should not be permitted and can be remedied only by teaching the public to realize that the existence of low-grade medical schools means the turning out of low-grade doctors.

SCIENCE, MEDICINE AND CULTURE

In extending the discussions in our editorial columns beyond the immediate boundary of what might be considered as the real field of medicine itself, we have apparently failed at times to meet the approbation of some of our readers, as reference to our Department of Knocks and Boosts will show. The question as to what are the proper limits in respect to diversity of theme and breadth of treatment which discussions in a journal devoted to the advancement of medicine ought to observe should not be answered from a solely professional point of view. In the belief that a broad appreciation of the advances in the related biologic sciences, as well as in the underlying disciplines on which the art of medicine is based, affords proper themes for contemplation by the physician of to-day, THE JOURNAL has taken pains to draw attention frequently to the progress recorded in other circles than those confined to the hospital, the clinic and the bedside. It is accordingly a source of satisfaction and interest to learn the view of a distinguished clinician, Professor His[1] of the First University Clinic in Berlin, in regard to the interrelation of the physician and the natural sciences. In a note published in the initial number of *Die Naturwissenschaften*, a weekly journal intended to present to German readers something akin to what *Nature* in England and *Science* in America offer, His appropriately emphasizes the fact that science and technology can no longer be sharply separated from medicine, the practical and theoretical aspects of which now radiate in nearly every direction. Almost every advance in chemistry, physics and biology is likely, to-day, to be followed by some prominent and far-reaching useful application which soon makes itself felt in the daily activities of the practitioner. The more theoretical studies of men like Liebig, Pasteur, Helmholtz and Roentgen were quick to find a prominent place in the sphere of practical medicine. Accordingly any tendency of the leaders of medicine to neglect the contributions which are now being made from these manifold domains can only result in a failure to promote progress. There is an added reason why the individual ought to keep abreast of the advances in the general field of science. He can scarcely foretell when he will be called on to apply in the routine practice of to-day what was yesterday, like the *x*-ray, a new discovery of apparently purely technical interest. Above all, the physician, who stands in most communities as the exemplification of culture and up-to-date knowledge, is in duty bound to maintain the eminent and honorable position which the man of medicine should enjoy among his fellows. Breadth of knowledge is in no way incompatible with intensity of interest and technical attainment in any profession.

1. His, W.: Arzt und Naturwissenschaften, Die Naturwissenschaften, 1913, 1, 3.

THE DOMESTIC FLY AND ITS ERADICATION

The fly is a nuisance aside from its assigned rôle of conveying infectious diseases, and the attempt to exterminate it needs no justification. How one can make one's home, town or city flyless is described by C. F. Hodge[1] of Clark University, Worcester, Mass. Hodge believes that it is not an intelligent method to spend $10,000,000 a year for window and door screens in a futile attempt to exclude a lively insect which insists on getting into the house every time the doors are opened. He believes also that the method of swatting the flies, using fly-paper or indoor traps or poisons is ineffective, but may help. His method is to make use in various ways of the conical wire-mesh fly-trap, which is familiar to almost every one, in such a way as to turn the tables on the flies and "put them in jail and let ourselves out." The plan involves, of course, the abolition as far as possible of all breeding- and feeding-places for flies and the application of the fly-trap mentioned above to the garbage-can, to the screens on windows, to the covers on manure-bins, etc., all of which can be done by a little mechanical ingenuity. Garbage-cans are on the market which have a cover larger than the can and not fitting down closely on it so that the flies gain access to the can under the cover and escape through a hole in the cover over which is fixed a fly-trap. In fighting the fly, Hodge has found that the essentials of a successful campaign are to transfer the fight against the fly from the house to outdoors, and then to exterminate it. Another essential feature in a town or city is that households must cooperate. One ignorant or careless home can breed flies enough to vitiate the best endeavors of a whole town. Hodge has succeeded in

1. Hodge, C. F.: How You Can Make Your Home, Town or City Flyless, Nature and Culture, 4 West Seventh Street, Cincinnati. Price, 2 cents.

his neighborhood in practically eliminating flies; he uses no screens in windows and doors, and can sit out doors or have windows or doors open at any time without molestation. As flies begin to breed early in the spring and as they breed with marvelous rapidity, the time to arrange for a fly-campaign is in the winter. An educational campaign in fly-extermination would be aided much by a distribution of the pamphlet of Hodge; in this connection, a little story, "The Autobiography of a Fly"[2] would also do much good.

PRESCRIBING NAMES

In the Propaganda Department of this issue, we give some space to a cough syrup which is put on the market by Parke, Davis & Co. under the name of Syrup Cocillana Compound. In exploiting this preparation, the manufacturers have used a method as old as the nostrum business itself. They have taken a mixture of little-known and therapeutically worthless drugs, added some well-known and valuable drugs and marketed the product in such a way as to lead the thoughtless to imagine that its therapeutic virtues are due to the little-known ingredients. In the Syrup Cocillana Compound there are three well-known drugs (hive syrup, heroin and cascara) possessing well-marked powers and having a proper place in medicine. But the prescriber of Syrup Cocillana Compound does not have in mind the old-fashioned syrup of squills, the powerful (and treacherous) heroin or the cascara when he orders this product for his patient. He believes, consciously or unconsciously, that the cocillana gives to this mixture therapeutic properties that his judgment would tell him he never could ascribe to the well-known ingredients of the mixture. Yes, the dodge is an old one. As the purchaser of "Syrup of Figs" believes that the fig syrup gives to the product the laxative effect which, as a matter of fact, comes from elixir of senna and Epsom salts — as those who buy "Pa-pay-ans-Bell" are likely to think that whatever therapeutic virtues these tablets may have is due to papain when, as a matter of fact, they must be credited to the charcoal, ginger and sodium bicarbonate of which they are composed — as the users of the various "cod-liver-oil compounds," which contain no cod-liver oil, fondly imagine that the effects obtained are due to oil instead of to the alcohol which forms so large a part — so the prescribers of Syrup Cocillana Compound probably think that its value as a cough medicine depends on the tincture of cocillana when, as a matter of fact, the squills, the heroin and the cascara are amply sufficient to account for every therapeutic action shown. Herein lies one of the vicious phases of the nostrum evil.

KEEPING UP TO DATE

The average country practitioner has little time and inadequate means for scientific research. It is easy for him to fall behind. A correspondent in the Knocks and Boosts Department of this issue says that he often tries to write out the answers to examination questions which we occasionally publish[1] in our Department of Medical Education and State Boards of Registration. This practice certainly gives him a good review, shows him what knowledge he may lack, and points the way for a little study. It will also interest him in the next article THE JOURNAL prints on the particular subject in which he finds himself not fully informed. The suggestion is worth passing along. The man who would keep up to date must have some means of judging where his knowledge is deficient; he can then add to his attainments and keep refreshing his mind on the manifold ramifications of the subject of medicine.

McCABE RESIGNS—A REAL JOKE

George P. McCabe, who falsified official documents, and who as dictator of the Department of Agriculture did yeoman service for the food adulterators, has, so the press notices state, "tendered his resignation as solicitor for the Department of Agriculture," to take effect March 4. Note the date! Press dispatches also record the fact that the Secretary of Agriculture, in accepting McCabe's resignation, "expressed regret that the department should lose one whose efforts had been marked with faithfulness . . ." The papers say, further, that in commenting on the resignation "President Taft stated that he was convinced of the thoroughness of the work done by Mr. McCabe." If the American people have not lost their ability to see a joke, these press dispatches will be preserved not so much for their news value as for their quality of subtle, if sardonic, humor.

Medical News

CALIFORNIA

New Hospital.—Plans have been made for a new hospital to be erected at Orange and Alvarado streets, Los Angeles, for the Westlake Hospital Association. The building is to be three stories in height and of reinforced concrete construction.

Non-Vaccinated Pupils Refused Admission.—When school opened in Berkeley, January 27, about 2,400 pupils were denied admission for failure to observe the order of the local and State Board of Health regarding compulsory vaccination.

Asks for Inebriates' Home.—Dr. F. W. Hatch, superintendent of the State Hospitals, in the biennial report of the State Lunacy Commission, recommends the repeal of the law regarding the commitment of inebriates to state hospitals and urges that a special institution be provided for the care of liquor and drug addicts, and that a new state hospital be established at some point in Southern California to relieve the congestion in the other state hospitals.

Personal.—Dr. John L. White, Sacramento, who was operated on for appendicitis in the White Hospital, January 25, is reported to be still in serious condition.——Dr. Charles B. Pinkham, San Francisco, has been appointed a member of the State Board of Medical Examiners, vice Dr. Charles L. Tisdale, Alameda, resigned.——Dr. J. O. Chiapella, Ripon, has disposed of his residence and practice to Dr. Gould of Monterey.——Dr. W. C. Chilson, Tulare, has returned after a 20,000-mile voyage on the Pacific.——Dr. Guy Manson has succeeded Dr. T. N. Sample, both of Fresno, as physician of Fresno County.

Medical Buildings Remodeled.—The clinical and laboratory building of the Stanford University Medical Department in San Francisco has recently been remodeled at an expense of about $40,000. This large building was formerly used by Cooper Medical College and had in it besides the large Lane Hall a number of amphitheaters and lecture-rooms, and the

2. Biennial Report of James H. Wallis, State Food and Sanitary Inspector, Boise, Idaho.

1. As, for example, in this issue, page 543.

Lane Medical Library. With the removal of the library to its new building and with the shifting of laboratories and the rearrangement of the space formerly occupied by Lane Hall, considerable additional space has been gained for the out-patient clinics and for laboratories.

ILLINOIS

Personal.—Dr. Julia C. Strawn started on a trip around the world by way of the West, February 6.——Dr. Adam Mackay was found unconscious from cold, February 1, and was taken to Wesley Hospital.——Dr. N. P. Ward, Saybrook, who has been ill for several months, is reported to be in a critical condition.——Dr. J. R. Tobin, Elgin, who has been ill with septicemia due to an infected wound of the hand, is reported to be out of danger.

Governor Recommends Establishment of Epileptic Colony.—Governor Dunne, in his inaugural message, recommended the purchase of 2,000 acres of land and the erection of buildings thereon at the earliest possible date, for the care of men, women and children afflicted with epilepsy.

Result of Support Law.—In the first year of the operation of the law which provides for payment to the state for the support of insane patients able to pay at least a portion of the expense, the State Board of Administration reports that it has collected $184,234 from patients and relatives of patients in the different state hospitals for the insane. This money is to be put directly into the state treasury and is not to be used for the conduct of the institutions.

Improvements for State Hospital.—The superintendent of the Watertown State Hospital asks for an appropriation of $225,000 for improvements in the institution. This includes the construction of a new infirmary and amusement hall, improved water-supply, the purchase of eighty acres of farm land, an underground passageway to connect the administration building with the annex, a separate building for women employees and a cottage for male tuberculosis patients.

The Panama Excursion.—Under the auspices of the Illinois State Medical Society an excursion to the Canal Zone has been planned, to start from Chicago, March 1. The price of tickets for the round trip from Chicago will be $245, and the train will run as a special from Carbondale, Ill., to Jacksonville, thence by the Over-Seas Railroad to Key West and by the steamer *Evangaline* to Colon. The prospects are that the party will number about two hundred. Arrangements are in charge of Dr. George N. Kreider, Springfield.

Physicians Asked to Report Deaths.—Dr. J. A. Egan, Springfield, secretary of the State Board of Health, and superintendent of the registration of births and deaths, asks physicians of Illinois to send in reports of any deaths in their practice in 1912 that have not already been reported to the state board or to municipal authorities in cities or villages having burial permit ordinances. For this service, the physician will receive a fee of 25 cents for each death reported, and the thanks of the State Board of Health.

Medical Practice Act Decisions.—In the Appellate Court of the First Illinois District, in the case of the people and the State of Illinois versus F. A. T. Powella, in which it was claimed that the defendant had practiced medicine without a license and the Municipal Court found her guilty, and sentenced her to a fine of $100 and costs, the judgment of the Municipal Court was affirmed.——In the second case, in which the Municipal Court had found the defendant, Mrs. A. Moser, guilty of practicing medicine without a license, and had fined her $100 and costs, she alleged as ground for reversal that there was no evidence before the Appeliate Court on which to base a verdict of guilt. In this case also the Appellate Court affirmed the decision of the trial court.

Chicago

Tuberculosis Institute Meeting.—The annual meeting of the Chicago Tuberculosis Institute was held January 29. The superintendent reported that the chief activities during 1912 had been the advocacy of the method of examination of employees in working places; a campaign for better care of advanced cases in public institutions and the creation of a traveling exhibit. All the summer schools were conducted jointly by Permanent School Extension Committee, School Board and Municipal Tuberculosis Sanatorium, and the improvement of the children in these schools shows what can be accomplished and the need of the work. Dr. O. W. McMichael reported that the institute had distributed nearly 600,000 pieces of literature and that the moving picture film entitled "On the Trail of the Germ," had been displayed in 30,000 moving-picture houses in the United States and viewed by not less than 60,000,000 people. Dr. Theodore B. Sachs reported the success attending the efforts of the Edward Sanatorium, Naperville, and laid especial stress on the importance of early diagnosis in tuberculosis. The constitution was so amended as to divide the work among five departments; namely, exhibits, in charge of Mr. George W. Perkins; literature, Dr. Orville W. McMichael; lectures and conferences, Dr. James Alexander Harvey; research, Dr. Ethan A. Gray, and extensions, Dr. Theodore B. Sachs. The following officers were elected: president, Dr. Theodore B. Sachs; vice-presidents, Drs. Frank Billings and Robert H. Babcock; secretary, Mr. Sherman C. Kingsley, and treasurer, Mr. David R. Forgan.

INDIANA

Evansville School Children Not Vaccinated.—On account of the prevalence of small-pox in Evansville, the Board of Health ordered that every school child be vaccinated. On account of failure to obey this order, 500 children were excluded from the schools.

Open-Air School.—The first open-air school in Indianapolis was opened last week with a great demand for attendance. The school is intended for children with inherited tendencies or delicate constitutions, and no tuberculous children will be admitted.

Personal.—Dr. Grant C. Markle, Winchester, was seriously injured, January 29, in a collision between his automobile and a freight train of the Big Four System.——Dr. Theodore Potter, Indianapolis, was elected vice-president of the Indiana Association for the Study and Prevention of Tuberculosis at its annual meeting, February 8.

KANSAS

Personal.—Dr. John M. Schrant, formerly of Dighton, has returned from Europe and will be located in Hutchinson.——Dr. F. A. Garvin, Augusta, has been appointed health officer of Butler County.——Dr. C. M. Hensley, Topeka, has been reelected health officer of Shawnee County.——Dr. C. E. Hunt, Eldorado, for forty-two years in the practice of medicine, has retired to take up his new duties of probate judge of Butler County.——Dr. C. S. Kenney, Norton, has been appointed superintendent of the new tuberculosis sanatorium, Newton.

New Officers.—Cowley County Medical Society at Arkansas City, January 29: president, Dr. Charles Dunning, Arkansas City; secretary, Dr. C. T. Ralls, Winfield.——Cloud County Medical Society at Concordia, January 22: president, Dr. F. A. McDonald; secretary, Dr. E. N. Robertson, both of Concordia.——Douglas County Medical Society at Lawrence, January 14: president, Dr. S. T. Gillespie; secretary, Dr. H. L. Chambers, both of Lawrence.——Ninth and Tenth Councilor District Medical Society organized at Norton, January 9: president, Dr. F. H. Smith, Goodland; secretary-treasurer, Dr. C. W. Cole, Norton.

KENTUCKY

Hospital Staff Banquet.—The annual banquet of the medical staff of Spears Hospital, Newport, was held January 30. Dr. J. J. Youtsey officiated as toastmaster.

Personal.—Dr. W. S. Stucky, Lexington, has left New York City and is now associated with his father, Dr. J. A. Stucky, in practice in Lexington.——Dr. William Kenney, Jr., Paris, was seriously injured by the kick of a horse, January 19.——Dr. Florence Meder has been reappointed second assistant physician at the Lakeland State Hospital.

Subscription for Frankfort Hospital.—A campaign has been started in Frankfort by the trustees of the Good Samaritan Hospital to raise by popular subscription a fund of $62,000, $32,000 for paying off the bonded debt of the institution and $30,000 for the erection of a nurses' home. The latter will be a three-story brick structure communicating with the main building by a bridge.

Conference on Cattle Testing.—A conference was called recently by the state veterinarian at the offices of the Kentucky Live Stock Exchange, Louisville, at which representatives of the state and federal governments and the city, county and state boards of health considered the question of testing all cattle which supply milk to state institutions. More than 4,000 patients and employees are dependent on these cows for milk and it was declared essential that these animals should be free from all traces of tuberculosis. It was agreed that the tuberculin tests be made without charge by the agents of the Department of Agriculture on the herds of all dairymen in the state on request. These animals will then be segregated and no animals suffering from tuberculosis will be allowed to be

brought into the state. A general cleansing and disinfection will be made further to guard against the disease, the state and national governments cooperating in this as far as possible.

MARYLAND

Bimonthly Bulletin Issue.—The Maryland Association for the Prevention and Relief of Tuberculosis is issuing a bimonthly bulletin for the dissemination of information regarding the suppression of tuberculosis in Maryland, etc.

Cornerstone Laid.—The cornerstone of the Miners' Hospital, Frostburg, was laid February 3. The site for the hospital was donated by the mayor and council. The state appropriated $25,000 for construction and $5,000 yearly for maintenance.

Personal.—Dr. W. W. Ford has been appointed a member of the State Board of Health, vice Dr. Nathan R. Gorter, resigned, to become health commissioner of Baltimore.——Dr. H. K. Derr, Hagerstown, is reported to be critically ill.——Dr. George W. Todd, Salisbury, has been elected a director of the Peninsula General Hospital.

Baltimore

Branch of the Society for Physicians' Study Travels.—Dr. Lewellys F. Barker has been selected to organize the Baltimore branch of the American Society for Physicians' Study Travels.

Psychiatric Clinic Staff Appointed.—Dr. Adolph Meyer has been made chief of staff and Drs. Henry J. Berkeley, Clarence B. Farrar, W. Rush Dunton, Edmund B. Huey, Trigant Burrow and David K. Henderson, members of the staff of the Phipps Psychiatric Clinic.

Portraits Presented to Faculty.—Oil paintings of Dr. John Francis Monmonier and John Buckler were presented to the Book and Journal Club of the Medical and Chirurgical Faculty of Maryland, January 21. Drs. Eugene F. Cordell and Samuel Z. Chew, delivered the respective presentation addresses.

Personal.—Dr. Leonard E. Beach sustained painful bruises and scalp wounds by the overturning of his automobile, February 5.——Dr. Ira Remsen, acting president of Johns Hopkins University, has asked to be relieved of his duties as president.——Dr. Arthur Wegefarth has been elected president and Dr. Alexander D. McConachie, secretary of the Northeastern Dispensary.——Dr. John S. Fulton resumed his duties as secretary of the State Board of Health, February 1.——Dr. Edmund Burke Huey, assistant in psychiatry at Phipps Psychiatric Clinic, who has been ailing for a long while, has gone to California to recuperate.

MASSACHUSETTS

Personal.—Dr. George H. Stone, Clinton, has been appointed night physician at the Boston City Hospital.——Dr. Walter C. Bailey, Boston, has been appointed a trustee of the Boston Consumptives Hospital.——Dr. George H. Fessenden, Ashfield, has been appointed associate medical examiner of Franklin County.——Drs. John S. Brownrigg, Roxbury; F. G. Barnum, Hyde Park, and Edward F. Timmins, South Boston, have been appointed assistants to the chief of the Boston Bureau of School Hygiene.

Boards of Health Meeting.—At the annual meeting of the Massachusetts Boards of Health Association, held in Boston, January 30, the following officers were elected: president, Dr. S. H. Durgin, Boston; vice-presidents, Prof. W. F. Sedgwick, Brookline, and Dr. C. V. Chapin, Providence, R. I.; secretary, Mrs. John C. Coffey, Worcester, and treasurer, Dr. F. G. Curtis, Boston. The legislative committee, in its report, urged that opposition be offered to three bills providing for the reorganization of the State Board of Health.

MINNESOTA

County Tuberculosis Hospital.—Construction work will be started early in the spring on the new tuberculosis building at the City and County Hospital, St. Paul. The building is to cost $75,000, to accommodate fifty patients and will be ready for occupancy about September 1.

State Board Upheld.—In the case of Boyd T. Williams, Minneapolis, formerly of Ohio, who made application for a Minnesota license under the reciprocal act, in which the application was refused on the ground that he was violating the ethics of the profession, the supreme court has affirmed the decision of the district court which had decided in favor of the state board.

New Officers.—Ramsey County Medical Society at St. Paul, January 27: president, Dr. C. J. Meade; secretary, Dr. Carl Smith, Jr., both of St. Paul.——Upper Mississippi Medical Society at Wadena, January 23: president, Dr. William Reid, Deerwood; secretary, Dr. A. W. Ide, Brainerd.——Blue Earth Valley Medical Society at Blue Earth, January 16: president, Dr. R. C. Hunt; secretary, Dr. J. A. Broberg, both of Blue Earth.——Nicollet and LeSeuer Counties Medical Society at Le Seuer, January 21: president, Dr. H. A. Hartung, Le Seuer; secretary, Dr. F. P. Strathern, St. Peter.——Park Region District and County Medical Association at Alexandria, January 15: president, Dr. A. J. Gilkinson, Osakis; secretary-treasurer, Dr. A. M. Randall, Ashby.——Carlton County Medical Society organized at Cloquet recently with Dr. S. O. Watkins, Carlton, president and Dr. Alexander Barclay, Cloquet, secretary-treasurer.——Hennepin County Medical Society at Minneapolis, January 6: president, Dr. H. H. Kimball, Minneapolis.——Red River Valley Medical Association at Crookston: president Dr. H. H. Hodgson, Crookston.——Midway Medical Association, organized at Midway General Hospital: temporary chairman, Dr. Fred E. Leavitt, St. Paul.——Minnesota Southern Medical Association at Mankato: president, Dr. A. B. Stewart, Owatonna.

MISSOURI

Personal.—Dr. Daniel Morton, St. Joseph, has been appointed a member of the Tuberculosis Hospital Commission of Buchanan County.——Dr. and Mrs. Joseph J. Carter, Weston, have returned from Europe.

Hospital Near Completion.—The new isolation hospital on the grounds of the Kansas City General Hospital is completed and partially equipped. It will accommodate from seventy-five to one hundred patients. There will be separate wards for scarlet fever, diphtheria, measles, erysipelas, chicken-pox and meningitis. Drs. Frank Neff, J. E. Hunt and C. S. Merriman, on the General Hospital staff, will be in charge of the hospital.

Provision for State Hospitals.—Fulton State Hospital No. 1 and the Missouri School for the Deaf, Fulton, in their biennial report asked the legislature to make appropriations of $422,495.17 for the biennium.——The president of the Board of Managers and the superintendent of the State Hospital No. 3, Nevada, estimates that $600,000 will be necessary for the maintenance of the institution and for the new buildings required during 1913-14.——State Hospital No. 4, St. Joseph, will receive an appropriation of $110,000 for the next biennium.

NEBRASKA

Personal.—Dr. J. A. Waggener, Omaha, was painfully burned by the explosion of gasoline in his garage, February 1.——Dr. G. E. Williams, University Place, has been appointed physician to the state penitentiary.——Dr. J. Frederick Langdon, Omaha, has gone to Butte, Mont., where he becomes assistant superintendent of St. James Hospital. He has been succeeded by Dr. Daniel F. Lee as assistant city physician of Omaha.

Report of Free Maternity Dispensary.—The first annual report of the Free Maternity Dispensary, Omaha, which is under the charge of the obstetrical department of the College of Medicine of the University of Nebraska, shows that seventy-four patients were cared for during the year, of whom thirty-nine were primiparae and thirty-five multiparae. Cesarean section was made once, version was performed once and five forceps deliveries were made.

New Officers.—Gage County Medical Society at Wymore, January 28: president, Dr. J. I. McGirr; secretary-treasurer, Dr. E. L. Penner, both of Beatrice.——Elkhorn Valley Medical Society at Norfolk, January 21: president, Dr. A. P. Overguard, Fremont; secretary, Dr. A. W. Wells, West Point.——Dodge County Medical Association at Fremont, January 15: president, Dr. P. R. Howard, North Bend; secretary-treasurer, Dr. S. A. Preston, Fremont.——Douglas County Medical Association at Omaha, January 15: president, Dr. B. W. Christie; secretary, Dr. R. R. Hollister, both of Omaha.

NEW YORK

Personal.—Dr. E. S. Willard, health officer of Watertown, was operated on for glaucoma in the Albany City Hospital, January 23, and is reported to be doing well.——Dr. John L. Heffron, dean of the College of Medicine of Syracuse University, was the principal speaker of the annual banquet of the Syracuse alumni in Rochester, January 28.

New York City

Three Ambulance Wrecks.—On three successive nights three different ambulances belonging to the J. Hood Wright Hospital were wrecked in collisions. On one of these occasions the doctor and driver sustained slight injuries.

Tuberculosis Annex Opened.—A tuberculosis annex and night camp has been opened by the New York Nose, Throat and

Lung Hospital, immediately adjoining the present hospital building. The annex contains fifty beds, thirty of which are for tuberculosis patients. The camp is intended for men only who go there after their day's work is done and where every detail of their lives is supervised.

Health Department Seeks New Offices.—The quarters of the Health Department at Sixth Avenue and Fifteenth Street, which the city has occupied for the last ten years, ending May 1, 1912, was retained by the department since the first of last May when the lease ran out, and while the owners of the property have asked $30,000 for the present year which is an advance of $10,000 over the rent previously paid, the department has paid only the former rent and is now threatened with eviction. Active steps are being taken by the city to get a permanent building for the department.

Long and Faithful Service Recognized.—A committee appointed for the purpose has sent out letters to the alumni of the University and Bellevue Hospital Medical College, reminding the recipient of the fifty years of faithful service of Mr. Joseph V. Standish, the clerk of the college, and stating that is has been decided to make him a substantial gift in recognition of his sympathetic support of students. It is also stated that many small sums will be more expressive of wide appreciation than a few large ones. Subscriptions may be sent to John A. Mandel, 338 East Twenty-Sixth Street, New York City.

Children Warned Against Coughing and Sneezing.—Dr. C. Ward Crampton, director of physical training in the public schools, has sent out a circular to principals and teachers directing their attention to the spread of diphtheria, measles, colds, etc., by coughing and sneezing, and urging them to instruct the pupils in the necessity of carrying a clean handkerchief to guard the mouth and nose when coughing or sneezing, and in case the cough or sneeze is too sudden for this to turn the head away from those about him. The annual recurrence of these infectious diseases in almost epidemic form makes such inroads in attendance as to seriously affect the progress of a large number of children and greatly adds to the expense of the department of education. At this time of the year the combined total of those affected by these diseases reaches about 1,000 each week, so that it is highly important that children should know how to protect themselves and others from infection.

Diseased Animals Foisted on Public.—An investigation undertaken by the *Globe*, which stands for the facts as presented, finds that the carcasses of hogs that show well marked and progressive lesions of hog cholera shall be condemned unless the carcasses are well nourished and show only "slight" and "limited" lesions, in which case they may be sold as food. The carcasses which show lesions more numerous or severe than those mentioned are to be condemned, but may be rendered into lard. A great deal of liberty is invested in the inspector in this matter. It is suggested that under such conditions the public should have full protection of the label law. In the case of tuberculosis, if there is no outward evidence that the tubercle bacilli have been distributed through the blood or by other means through the tissues the meat is considered wholesome and is passed. If the tuberculosis appears only in the lungs and kidneys, or the liver and lungs, or if it is found in but one or two of the other organs, the carcass is passed as fit for food. There is the same laxity in case of lymphadenitis.

NORTH DAKOTA

State Society Meeting.—It is announced that the annual meeting of the North Dakota State Medical Association will be held at Minot, May 7-8.

State Sanatorium Opened.—The State Sanatorium, Dunseith, has been formally opened. There are twelve patients in the institution and applications are already on file for more than its present capacity.

Personal.—Dr. Frederick E. Salvage, Fargo, was adjudged insane, January 24, and committed to the Jamestown State Hospital.——Dr. Howard A. LaMoure, formerly superintendent of the State Institution for the Feeble-Minded, Grafton, has been appointed superintendent of the Pueblo (Colo.) State Hospital.

Tuberculosis at State Hospital.—The North Dakota Board of Control of Penal and Charitable Institutions in its report claims that 25 per cent. of the patients of the institution have tuberculosis and that there is no place to segregate the male tuberculosis patients. The legislature is to be asked to make an appropriation for the construction of a separate building for this purpose.

New Officers.—Northwestern North Dakota Medical Society at Minot, January 21: president, Dr. A. Carr; secretary, Dr. Frank Brugman, both of Minot.——Devils Lake District Medical Society at Devils Lake, January 10: president, Dr. W. D. Jones, Devils Lake; secretary, Dr. G. F. Drew, Crary.——Tri-County Medical Society (Wells-Benson-Foster) at New Rockford: president, Dr. A. J. Clay, Bowdon; secretary-treasurer, Dr. O. W. McClusky, Carrington.

OHIO

Inter-County Tuberculosis Hospital.—The secretary of the board of trustees for the building of a joint tuberculosis hospital for Mahoning, Stark and Summit counties announces that each county has paid in its share of the cost. Bids have been received for the construction of the building.

New Buildings for State Hospital.—An appropriation of $160,000 has been asked for the betterment of the Dayton State Hospital. One-half of this amount will be spent for two new buildings for an infirmary and hospital wards, the remainder being used for a cold storage plant and the installation of other needed conveniences.

Personal.—Dr. J. E. Welliver, president of the Dayton Board of Health, is reported to be critically ill with pneumonia.——Dr. O. H. Sellenings, Columbus, has been reappointed a member of the State Board of Health.——Dr. R. G. Perkins, Cleveland, has been appointed city bacteriologist.——Dr. Alva Richards, New Lexington, is reported to be critically ill at his home as the result of a cerebral hemorrhage.

Cincinnati

Personal.—Dr. Robert Stewart has been elected president of the board of trustees of the University of Cincinnati.——Dr. Octavius B. Schmall has been committed to Longview Hospital for the Insane.——Dr. and Mrs. Frederick W. Lamb have sailed for Europe.

New Officers.—Medical Civics Association, annual meeting, February 5: president, Dr. Robert Stewart; secretary, Dr. Frank B. Cross. The paper of the evening was on "River Terminals," and the problem of sewage disposal was also discussed.——Cincinnati Women's Medical Society, January 28: president, Dr. Nora Crotty; secretary, Mrs. Margaret Rockhill.

Work of Social Service Association.—The Social Service Association of the Cincinnati Hospital during its first year has had almost one thousand patients. The association has acquired a convalescent home near Cincinnati which will accommodate twenty-five patients. One important field of labor has been disclosed by a recent advertisement in which a firm asks for laborers who have lost the left leg. Investigation showed that the company operated machines which could be worked easily by the right foot alone and that they had been induced to insert this unique advertisement at the request of the Social Service Association.

Welfare of the Blind.—Dr. Louis Stricker, head of the department of prevention of blindness of the Cincinnati Association for the Welfare of the Blind, in his annual report to the city health department states: "Several lives have been saved and twenty-seven new-born infants were saved from lives of blindness. The cost to educate any one of these children, had they become blind, would have been five times as great as the entire cost of the prosecution of the work of this department for a whole year, and it would have required ten times as great a sum to pay the pension of each one of these did they continue to live up to the fiftieth year, leaving entirely out of consideration the loss of earning capacity. Though there are many hospitals and clinics taking care of those afflicted with eye diseases, those whom we have reached, would never, by reason of their ignorance, have voluntarily presented themselves until too late to prevent serious consequences, and it is just this class that have become a charge on the local community or the state in case of blindness."

PENNSYLVANIA

Sanatorium for Pittsburgh.—A new municipal tuberculosis sanatorium for Pittsburgh is to be established on the Leech Farm on the hilltop opposite Highland Park. In order to bring the tuberculosis treatment within reach of patients, it is proposed by the Committee on Tuberculosis Hospitals to erect dispensaries in different parts of the city.

Personal.—Drs. S. M. Wolfe and F. P. Lanahan have resigned from the staff of the Nesbitt West Side Hospital, Wilkes-Barre.——Dr. C. W. Sheldon, Tioga, was thrown from his buggy in a runaway accident, January 28, but luckily suffered only a few bruises.——Dr. Herman Boyles, New Castle, who sustained

severe injuries by being pinned under his overturned automobile recently, is reported to be improving.

Hospital News.—The trustees of the proposed Abington General Hospital announce that plans for the new hospital to be erected on the Old York Road will be submitted immediately for estimates and that construction work would probably be started in March.——The Monongahela Memorial Hospital Association has erected a new building just outside the city limits at a cost of $75,000, of which $20,000 has been appropriated by the state.

Railway Fatalities.—The State Railway Commission shows in its annual report that there were 1,179 persons killed on the steam railroads in Pennsylvania last year and 11,034 were injured. This loss of life almost equals that in some of the notable battles of the Civil War, not singly, but combined. In Grant's campaign of sixty-four days in the Southwest, culminating with the capture of Vicksburg and including the battles of Port Gibson, Fourteen-Mile Creek, Raymond, Jackson, Champion Hills, Big Black Bridge and Vicksburg, the total Federal loss in killed was 1,243, only 64 more than the number of people killed by the railroads of this state in 1912. If to these figures is added the number of persons killed on the street railways of Pennsylvania for 1912, 177, the total number of deaths from both steam and street railways amounts to 1,356 or 113 more than the total killed in seven battles fought by Grant in the campaign mentioned. There were 4,052 persons injured on street railways in 1912.

Philadelphia

Laryngologists to Meet.—The Eastern Section of the American Laryngological, Rhinological and Otological Association will hold its meeting at the Bellevue-Stratford, February 22.

Surgical Ward for University.—Plans have been made for a six-story surgical ward, 92 by 94 feet to be erected at the southwest corner of Thirty-Fourth and Spruce Streets for the University of Pennsylvania.

Naval Hospital Annex.—To relieve the overcrowded conditions at the Naval Hospital at Twenty-Third Street and Gray's Ferry Road, a frame barracks at the eastern end of the Philadelphia Navy Yard has been converted into a temporary hospital for convalescents.

Unable to Find Explanation for Appendicitis.—An investigation made into the great number of cases of appendicitis among the boys of St. Francis' Industrial School at Eddington failed to find any cause. Thirty-three boys have been operated on for the disease in the last three weeks.

Mental Hygiene Exhibit.—The mental hygiene exhibit prepared for the International Congress of Hygiene and Demography will be held in Philadelphia, March 13-22. The exhibit consists of charts, statistics, photographs and models showing past and present methods of care for the insane.

Phipps Institute Nearly Ready.—The new building for the Henry Phipps Institute of the University of Pennsylvania for the study, treatment and prevention of tuberculosis is rapidly nearing completion and, it is expected, will be ready for occupancy this month. The dedication will take place in June.

Home for Destitute Physicians.—The Aid Association of the Philadelphia County Medical Society is considering the establishment of a home for destitute members of the profession and their wives. It is said that a widow of a physician has expressed her willingness to donate a residence in the suburbs to be used for this purpose.

Reorganization of Health Department.—In a report prepared by the Bureau of Municipal Research, complete reorganization of the Department of Health and Charities is suggested with the creation of an additional bureau of hospitals and the return to the state of some of the functions which are now discharged by the city.

Gifts to College of Physicians.—At the stated meeting of the College of Physicians, held February 5, an Assyrian medical tablet, dating from the seventh century B. C., the gift of Drs. S. Weir Mitchell and Richard H. Harte, was presented by Dr. F. P. Henry, and an original miniature in ivory of Dr. John Morgan, and a silver cigar lighter presented to him in 1765, gifts of Miss Julia Morgan Harding, were presented by Dr. George F. Baker.

Baby Saving Show.—The third of the series of baby saving shows under the auspices of the Child Hygiene Committee of Philadelphia, was opened in the Southwark Public School, February 5, and will remain open until February 15. Lectures and lantern demonstrations are given daily, and a feature of the show is the chart and demonstrations, showing mothers how to feed and dress their babies. A number of cough medicines and soothing syrups which are injurious to infants are also named on charts, and are given prominent places in the exhibit. The fourth exhibit will be at the McCall School at Fifth and DeLancey Streets.

SOUTH CAROLINA

Room Secured for Medical Society Library.—The Columbia Medical Society has rented a room in the Y. M. C. A. building to be used as a library. Both current literature and scientific text-books will be at the service of the members of the society.

Personal.—Dr. Theodore M. DuBose, Jr., has been appointed physician in charge of the hospital at the Fifth National Corn Exposition, Columbia.——Dr. H. A. Mood has been elected health officer of Sumter.——Dr. Max Goldman, who disappeared in July from his boarding place in Knoxville, Tenn., where he was engaged as assistant city bacteriologist, was found ill in Roanoke, Va.

New Officers.—Clarendon County Medical Society at Manning: president, Dr. G. L. Dickson, Manning; secretary-treasurer, Dr. H. L. Wilson, Jordan.——Florence County Medical Association at Florence: president, Dr. C. D. Rollins, Lake City; secretary-treasurer, Dr. F. K. Rhodes, Florence.——Columbia Medical Society: president, Dr. C. F. Williams; secretary-treasurer, Dr. W. R. Barron.——Pickens County Medical Society at Easley: president, Dr. C. N. Wyatt; secretary-treasurer, Dr. R. J. Gilliland, both of Easley (reelected).——Charleston County Medical Association organized with Dr. J. M. Thompson president and Dr. M. M. Edwards secretary.

SOUTH DAKOTA

Higher Preliminary Requirements.—The State Board of Medical Examiners now requires that an applicant for license who matriculated in a medical school subsequent to Aug. 1, 1911, must have completed a preliminary education consisting of two years of work in a college of liberal arts or its equivalent, in addition to an accredited four years' high school course. No medical college will be considered in good standing which accepts or graduates students with less than this amount of preliminary education.

Report of State Sanatorium.—The biennial report of the State Sanatorium for Tuberculosis, Custer, showed that for the last fiscal year the maintenance expense has been $6,806.84 and the income from the various counties $5,637.88, leaving a deficit of only $1,168.96 for the state to meet. At present, the institution has accommodation for only fourteen patients and the superintendent believes that, if it could be so enlarged that from seventy-five to one hundred patients could be received, the sanatorium would very soon become self-supporting.

New Officers.—Aberdeen District Medical Society at Aberdeen, January 28: president, Dr. R. D. Alway; secretary, Dr. W. D. Farrell, both of Aberdeen.——Yankton District Medical Society at Yankton, January 8: president, Dr. E. M. Morehouse; secretary-treasurer, Dr. James Roane, both of Yankton.——Watertown District Medical Association at Watertown: president, Dr. J. B. Vaughan, Castlewood; secretary-treasurer, Dr. S. B. Dickinson, Watertown.——Mitchell District Medical Society at Mitchell: president, Dr. F. W. Freyberg; secretary, Dr. C. S. Bobb, both of Mitchell.

TEXAS

Furnishings Supplied for Hospital.—The furnishings and fixtures for the Walter Colquitt Memorial Hospital which is being erected in Galveston by the Texas Antituberculosis Society are to be furnished by the John Sealy Hospital Aid Society.

Asks for Building Site.—At the annual meeting of the Houston Antituberculosis League, Dr. Elva A. Wright was elected president and it was decided to petition the commissioners of Harris County to set aside a site on the grounds of the county jail on which to erect a suitable structure for a tuberculosis dispensary.

New Officers.—Central Texas District Medical Society at Waco, January 15: president, Dr. R. R. White, Temple; secretary, Dr. Frank Connally, Waco (reelected). The next meeting will be held at McGregor.——Panhandle District Medical Association at Amarillo, January 15: president, Dr. J. C. Anderson, Plainview; secretary, Dr. J. J. Crume, Amarillo.

Society Opposes Contract Practice, Fee-Splitting and Advertising.—The Bexar County Medical Society at its meeting in San Antonio, January 16, adopted an amendment to its constitution prohibiting members from engaging in contract practice, and fixing expulsion as the penalty for violation. The society also placed itself on record as opposing advertising of all kinds by physicians, and the secret division of fees.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Feb. 1, 1913.

The National Insurance Act in Operation

Considerable difficulties have arisen in the commencement of the working of the medical benefit part of the national insurance act. This is partly due to the attempt of the British Medical Association to boycott the act, and the resultant rush which followed failure to do so, and partly to a large amount of clerical work thrown on the doctors. Much of this appears to be unnecessary and a manifestation of the cumbrous officialism or "red tape" which characterizes all government work. Doctors' offices are besieged by long queues of insured persons for the purpose of having "their cards signed." They apply to be registered on the list of a physician whom they may choose from the panel; this is done by the physician writing his name on a red card supplied to the insured persons by the government. The physician can examine them or not, and accept or reject them as he pleases. The work entailed by this registration alone has been so great that professional work has been seriously hampered. In one case a scandal occurred as the result of the administration, without proper examination, of a mixture for dyspepsia to a man suffering from strangulated hernia. Later he was removed to a hospital and herniotomy was performed too late. At the inquest the physician said that he was too "rushed" by the insurance act to have time to attend to his patients properly—an excuse which was accepted. This congestion of work is of course only temporary and due to the sudden putting into operation of a system of enormous magnitude, full of complicated details. But the cumbrousness of the regulations is a different thing. For every patient treated the physician has to make three copies of the prescription—one to retain himself and two to send to the pharmacist, who retains one and sends the other to the government. It is true that the physician is supplied with prescription books and carbon papers, so that he need write the prescription only once, but sometimes the process is not quite successful. Physicians are also supplied with huge day-books. In these no fewer than ten entries must be made for each patient, no matter how slight the ailment—name, address, society number, sex, age, occupation, illness, etc. The pages are perforated so that a portion containing the name of the complaint but not of the patient can be torn off. This is to be sent to the insurance commissioners for statistical purposes. The clerical work is so great that many physicians after a hard day's work have to sit up till the small hours of the morning making entries in the book. Already a movement is on foot among practitioners for the purpose of having the regulations altered so as to simplify the clerical work.

THE POSITIONS OF THE HOSPITALS

The hospitals of this country are supported by voluntary subscriptions, and form a feature of the national life contrasting strongly with the state-supported hospitals of the Continent. They are open free to the poor—a term of some elasticity, which in this case means all who are unable to pay the high fees which an operation or some other work requiring a specialist involves. The outpatient departments are frequented by persons with ordinary ailments, such as dyspepsia and chronic bronchitis, and it has always been a grievance with the medical profession that many of these could pay the small fees of the general practitioners. The insurance act has seriously altered the position in more ways than one. Now that the government has become responsible for the medical treatment of the workers, the question is being asked why the voluntary hospitals should receive them. On the other hand, the fact remains that the act has made no provision for operations or other treatment requiring special skill, and the need for the hospitals to supplement the work of physicians under the act is just as great as the need has been for them to supplement the work of the general practitioner in the past. But it is improbable that the government can stop at the point which it has reached. If the hospitals decline to treat insured persons, as many advocate, the government will be compelled to undertake the special as well as the general treatment of the insured. This would probably mean the taking over, partly or completely, of the voluntary hospitals, and in time the extinction of the voluntary hospitals and the substitution of the Continental system of state support. The first effect of the act on many of the hospitals has been a large decrease in the number of outpatients. Many persons with trivial ailments who would have been previously dealt with at the hospitals have been referred to the insurance doctors. Others have been treated once and then been informed that they cannot come again unless a physician certifies that the case is a suitable one for hospital treatment. On the other hand, the act so far has not had any effect on the inpatients, whose cases are all more or less serious. Another manner in which the hospitals will probably be affected is by a decrease of subscriptions. At present they are supported principally by the donations of persons who are wealthy or at any rate in comfortable circumstances, some of them large employers of labor. These persons are now taxed for the benefit of the insured, and it is certain that some of them will not submit to both compulsory and voluntary benefaction, and will therefore cease from contributing to the hospitals. Another source of support is collections from the working class, made up of small sums but totaling considerable amounts. These will also probably fall off as the contributors will consider provision for institutional treatment a government affair, as domiciliary treatment now is.

The Health of the Navy

A report on the health of the navy in 1911 has just been issued. The strength of the navy amounted to 117,100, of whom 79,520 were serving in the home fleet and 37,580 abroad. The health of the force shows a continuous improvement during the last five years; thus the cases of sickness in the five years, 1906 to 1910, averaged 679.9 per thousand strength, while in 1911 they amounted to only 652.9. The chief causes of admission to hospital were venereal diseases, which amounted to 115 per thousand—a figure which shows but a slight improvement on the ratio for 1906-1910, which was 121. Digestive diseases came next with 114 admissions per thousand. Tuberculosis with 2.44 was slightly above the previous average of 2.02, and rheumatic fever was also higher than the average —7.61 against 5.83. Typhoid fever caused 137 admissions and 30 deaths. The only outbreak occurred on a ship on the Atlantic fleet and was traced to infection on shore. Mediterranean fever is now almost extinct in the navy in consequence of the precautions taken against drinking unboiled goat's milk. Only 83 cases of alcoholism were admitted to hospital, an average of 0.7 per thousand, against an average of 0.96 in the preceding five years. This shows the great improvement in the use of alcohol which has taken place not only in the navy but also in the army and in the country generally. There were 218 cases of poisoning, of which 150 were due to ptomains, a large increase over recent years, and two deaths resulted from this cause. These cases were caused by eating such things as periwinkles, fish-cakes and tinned peas.

A State Medical Service

Dr. Benjamin Moore, professor of biochemistry at the University of Liverpool, who is distinguished as a writer on abstruse physiologic and medicopolitical subjects, has delivered a lecture before the Medicolegal Society on the "First Steps Toward a State Medical Service"—a project which he has championed for some time and long before the introduction of the national insurance act. He argued that national economy was the first cause that made his scheme necessary. By an efficient medical service many millions of pounds would be saved annually. The amount which sickness and disease cost annually must exceed $500,000,000. The cost of the insurance act for 14,000,000 people was about $120,000,000, but this did not take into account the loss to the workers through enforced idleness or the loss due to preventable deaths. Of this sum more than $30,000,000 were spent in the treatment of disease and only $5,000,000 in its prevention. The insurance act would undoubtedly do much to prevent the vicious round of troubles that resulted from the simultaneous attack in a household caused by the cessation of wages at the same time that extra expenses were caused by doctoring and the cost of the sick-room. On the supposition that half of the $500,000,000 that sickness costs annually could be saved by a properly organized state medical service, the project would be justified on an economic basis alone. A second reason for the service was national efficiency and physique. The idea that modern scientific medicine, by diminishing the incidence of infectious diseases, prevented the elimination of the unfit and was degrading the physique of the race, was false. The problem of the age looked at from the truly eugenic point of view did not consist in breeding a race fitted to inhabit a germ-laden world, to be capable of withstanding an utterly vile and vicious environment. It consisted rather in forming a pure, healthy and happy environment, and then in producing the noblest and ablest race both physically and mentally to inhabit that purified environment. It was because of our

antiquated system of medical practice for pecuniary gain that physical deterioration existed. It was time that both the profession and the public should be disillusionized regarding the time-honored heresy that disease could be eliminated by discovering the cure for maladies. No disease in all history had been materially lessened in its incidence by the discovery of a cure. It was organized preventive medicine that by attacking disease at its incidence and making an environment clean had practically annihilated many diseases. There was a third reason, which he would call the scientific reason: social evolution and the production of a clean, healthy and beautiful world could not be achieved until disease had been conquered. He felt that the scientific power which had brought about the gain in knowledge must soon evolve a method for its application. A state department of medicine should be constituted with a responsible well-informed and well-trained minister in Parliament to represent it. Next in order to the central body would be a corps of about 2,000 men to concern itself with such matters as industrial disease. Finally, the local services would have to be organized. The full service would require the whole of the 30,000 physicians on the medical register. A fair basis of payment would be $2,500 a year with a retirement on pension at the age of 65. The total cost of this would be about $75,000,000. Other expenses, not including such existing expenses as those of hospitals, nursing staffs, etc., would bring the expense up to about $105,000,000. At any given time there would be between 2,000 and 3,000 retired physicians, from 4,000 to 5,000 in institutional service, 1,000 in postgraduate work, between 1,000 and 2,000 in diagnosis and research work and the remaining 18,000 to 20,000 inspecting, preventing and treating disease.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Jan. 24, 1913.

The Skull of Descartes

In the collections of the museum of natural history the skull of Descartes, which was supposed to have been lost, was found (THE JOURNAL, Oct. 19, 1912, p. 1469). As doubts of its genuineness were raised, M. Gaston Darboux, secretary of the Académie des Sciences, asked members of the Académie des beaux-arts, especially painters and sculptors, if a comparison of the measurements of this skull with those which might be made from some portraits of the great philosopher would help to identify the skull. The Académie des beaux-arts appointed Dr. Paul Richer, professor of anatomy at the École des beaux-arts, a sculptor and a talented carver of medals, a member of the Académie de médecine and the Académie des beaux-arts, to do this work. Richer took a painting of Descartes by Frans Hals and in order to reduce the personal equation to a minimum adopted the following method: First he made a drawing from the portrait of a skull fitting the portrait as closely as possible; second, he placed the skull in the attitude of the head in the portrait and made a drawing on the same scale; third, he superimposed one drawing on the other. The two drawings proved to coincide almost exactly; other drawings made at random of several skulls under the same conditions showed no correspondence whatever with the portrait of Frans Hals. The same thing was repeated with other portraits of Descartes, and Dr. Richer concluded that the skull preserved at the museum showed the closest similarity to that revealed by the portrait painted by Frans Hals. While the other portraits did not give so exact a result, nevertheless they supported the conclusion that the skull was genuine.

At the last meeting of the Académie des Sciences, M. Edmond Perrier, director of the museum, said that as soon as the skull was proved genuine it would not be proper to permit this precious relic of the great philosopher to remain where it was. He will construct a cabinet for it so that it may be placed in one of the halls of the museum where other valuable relics are already kept and where the skull may be exhibited together with documents proving its authenticity.

The Value of Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis

At the meeting of the Académie de médecine, January 21, Dr. Louis Rénon, *agrégé* at the Faculté de médecine de Paris and physician to the hospitals, read a paper in which, taking as a basis published reports and his personal experience, he showed that while artificial pneumothorax has considerable value theoretically in the treatment of pulmonary tuberculosis, its practical value is considerably less. Often the method of Forlanini cannot be applied owing to the frequency of extensive and irreducible pleural adhesions. Then, too, the fact that the lesions ordinarily occur on both sides is a contraindication to its use. Moreover, there is considerable difference of opinion as to positive results from artificial pneumothorax. But its immediate results are remarkable in severe cases of tuberculosis and in acute fever, and among the tuberculous with hemoptysis as well as in certain cases of tuberculosis with cavity formation. The disease is often arrested in an extraordinary manner. Patients live whose lives have been despaired of and whose trouble had resisted other treatment. To gain time is at present the actual practical end of artificial pneumothorax. This method ought to be used in the therapy of tuberculosis only as a provisional method until a better one is offered and only in circumscribed areas which must be marked out with great care clinically and roentgenographically in each individual case.

Dentists and General Anesthesia

It was decided by one of the courts at Paris recently that surgeon dentists who have received a diploma since Nov. 30, 1892, after having taken the necessary studies for the practice of surgery, may use local and general anesthesia in their operations without being obliged to call a physician.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Jan. 25, 1913.

Personal

On January 21 the prominent Berlin pediatrist, Prof. Otto Heubner, celebrated his seventieth birthday. One of his first works, on syphilitic endarteritis, was the basis for the picture of this disease. Of special importance also were his works on cyclic albuminuria, infantile scurvy, his pathologic-anatomic researches into the nutritive disorders of infants, his calorimetric investigations in normal and sick infants, his studies of diseases of the kidney in childhood and many others. His excellent text-book on diseases of children has gone through many editions. Heubner's birthday was taken as an occasion for his nomination as honorary member of the Berlin Society for Internal Medicine.

Prof. M. B. Schmidt of Marburg has received a call as regular professor of pathologic anatomy in Würzburg.

Friedmann's Treatment for Tuberculosis

As previously mentioned in THE JOURNAL early in November, the Berlin investigator of tuberculosis, Friedrich Franz Friedmann, reported a new remedy before the Berlin Medical Society, with which he claimed to have had surprisingly favorable experience as a result of treatment of more than a thousand patients. In spite of the repeated demands of speakers who took part in the discussion, Friedmann gave no definite information in regard to his preparation. He injects it mainly subcutaneously and intramuscularly, but also intravenously and by the method which he calls simultaneous, both intravenously and subcutaneously. According to his statement, scrofulous tumors of the glands, tuberculous abscesses, chronic scrofulous eczemas, bone and joint fistulas and especially pulmonary phthisis have been cured. Suppuration is said not to appear in connection with this treatment as it does after treatment with the Koch tuberculin. The Friedmann preparation has also been used as a prophylactic vaccination in children with hereditary taint. The vaccination consists of a single intramuscular injection; it is said that no injurious action was observed. In the discussion which followed this report, the statements of Friedmann were endorsed by several observers whose patients in clinics had been treated by Friedmann. Among them were the pediatrist Müller, the surgeon Schleich, the pediatrist Karfunkel, and others. The laryngologist Blaschko reported with some reserve as to the results. The urologist Schwenk reported a failure in the treatment of a patient with tuberculosis of the bladder and kidney, and denied the apparently good results which were reported by Friedmann in this particular case. Bier, director of the surgical clinic, gained the impression that there is a certain curative action present in this remedy, but he has not as yet seen a conclusive case. The patients treated at his clinic had cases mostly of the fibrous type, and had largely been treated already by operation. He has not as yet seen a cure in a real severe fungous joint case. Orth, who at Friedmann's request took in charge the control of experiments in which infected guinea-pigs were treated by Friedmann with his remedy, acknowledged that the animals treated lived considerably longer than the others, but

that finally all died of tuberculosis. A number of experienced investigators warned against exaggerated hopes and expectations. Fritz Meyer, an assistant of His, fails to find the proof of real cure as shown by the tuberculin reaction. He has further not yet seen a proof that any tuberculous cases can be cured or improved by the Friedmann treatment which could not be improved by the methods of treatment hitherto known, especially in the case of tuberculosis of the kidney and acute pulmonary tuberculosis. He, as well as several other speakers, raised a lively protest against the prophylactic vaccination, because a vaccine containing living turtle bacilli, notwithstanding their breeding from the turtle strain, may originally have had their source in man and thus become later on the cause of a tuberculous infection in children. Goldscheider holds that there is little evidence as far as the treatment and cure of pulmonary tuberculosis is concerned. He fails to find reports about the status before and after the treatment. On the whole, it is true that the reports of Friedmann have excited much interest, but this has nearly completely been lost by the profession as well as by the public. It takes a different aspect here from that which it assumes in America, where, according to newspaper notices which were sent to me (probably intentionally by interested persons), sensational reports about the curative action of the Friedmann treatment are continually being published. As a basis for the apathy with which further reports of Friedmann are awaited, the following points may be mentioned: At first, the lack of a definite statement as to the composition of the remedy, to which is added lately also the report that Friedmann will have the remedy patented; then, the complete failures which have been observed since the well-known publication of Robert Koch on tuberculin, in connection with all apparent cures for tuberculosis; further, the criticism to which the remedy was subjected during the discussion by investigators of good repute, and, last but not least, the lack of confidence which has been accorded Friedmann in the scientific world since his previous publications. In 1904 and 1905 he began to experiment with cultures of the turtle tubercle bacilli strain and reported very favorable results which he obtained with this treatment on cattle. Later on, however, he was energetically repudiated by Rüppel, on the ground of this very preparation which Friedmann had given as the evidence of the success of his treatment. Also Robert Koch felt great distrust of the reports of Friedmann, as he himself told me. Everything considered, it is not surprising that at present, after my inquiries, the remedy is not yet used in a single Berlin hospital. Only Friedmann himself continues his experiments with the remedy on patients in his own clinic. I understand that he contemplates publishing a rather extensive monograph in which all the material together with an accurate protocol will be published. More will be learned from the patients who will be treated and controlled from the beginning by other observers, however, than from this treatise. Only then shall we be in the position to give an opinion with some certainty as to the value or worthlessness of the treatment. At any rate, for the present there is no reason whatever for any enthusiasm, and it would be desirable, in the interest of patients in America, if our American colleagues would do what they can to dampen somewhat the enthusiasm roused by sensational reports. [Those who wish to read more may see THE JOURNAL, Dec. 7, 1912, p. 2081; Dec. 14, 1912, pp. 2158, 2159, 2192; Jan. 4, 1913, pp. 67, 70; Jan. 25, 1913, p. 309, and Feb. 1, 1913, p. 375.—ED.]

Coming Meetings

The Congress of the German Society for Orthopedic Surgery will be held in Berlin, March 25. The main topic is "The Treatment of Chronic Arthritis," and the introductory address will be given by Kraus of Berlin.

The German Surgical Society will hold its meeting in Berlin, March 26 to 29. The main themes are "Ulcus duodeni (by Küttner of Breslau); "Brain and the Spinal Cord Surgery" (by von Eiselsberg and Ranzi of Vienna), and "The Treatment of Joint and Bone Tuberculosis" (by Garrè of Bonn).

Conviction of Physicians for X-Ray Injuries

For the purpose of extracting a foreign body from the back of a patient, two Baden physicians used the *x*-rays and through their carelessness the patient was severely burnt. He filed a suit for damages against the physicians, and as has previously been done in similar cases, the physicians were sentenced to pay the patient $2,500 (10,000 marks) for his injuries.

Municipal Sanatorium for Pulmonary Diseases

A sanatorium for patients with pulmonary and laryngeal disease will soon be established on the manorial estate Bush, which is located near, and belongs to, Berlin, and where already several other large municipal sanatoriums are located. The expense is estimated at $2,125,000 (8,500,000 marks).

Causes of Increased Nervous Disease in the Army

The extent of nervous and mental diseases in Germany is discussed in the German Army Medical Journal (*Deutsche Militärärtztliche Zeitschrift*), and the following conclusions are reached: By a careful selection before the commencement of military duty, a more marked decrease of these diseases may be expected. The fact that no decrease has been secured indicates an actual increase of mental diseases in the population. It cannot be proved statistically that cases of neurasthenia and hysteria have increased. Very prominent among the neurasthenics, however, is the large number of men identified with sedentary pursuits. In the army especially the paymasters are afflicted by many diseases of this kind. Alcoholism and syphilis, the main causes of mental and nervous disorders, have not increased in the last few years. On the other hand, the unfavorable influence of civilization in general, resulting in neurasthenia and paralysis, is much greater at present than formerly. Cases of severe forms of mental derangements have not increased in the army; they have even decreased. The number of severe forms of convulsions (severe epilepsy and hysteria) remained about the same. Everything considered, one gains the impression that our civilization, which especially in Germany forces continually the country population into the background, brings along an overtaxation of the nervous system, and as a result weakness and insufficient power of resistance against external injurious conditions, such as syphilis, alcohol, etc.; the weakened disposition appears to be hereditary. On the other hand, the nervous system can be adapted to the increased requirements; it is possible for strong natures to work while the nervous system is taxed to its utmost, and produce such works as only the modern man can accomplish—and yet without becoming ill with nervous or mental diseases. A general nervous degeneration cannot be expected, but the nervously weak frequently succumb. The increase of mental and nervous diseases in Germany, which even the foreigners notice, is explained by the sudden transformation of Germany from an agricultural state into an industrial one.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Jan. 20, 1913.

The Correlation Between Tuberculosis of the Uropoietic System and Tuberculous Meningitis in Vienna

Drs. Blum and Müller have in the course of investigations on the fate of patients suffering from tuberculous disease of the uropoietic or genital organs discovered a remarkable correlation between these organs and the meninges. Within the last ten years there died and were subjected to post-mortem examinations in the Vienna General Hospital 5,372 persons from tuberculosis. Of these, 723 suffered from tuberculosis of the urinary system, and of the latter, 222, or 30 per cent., had also tuberculous meningitis. In 77 cases the genital organs were affected, with 17 per cent. of meningitis; 105 persons suffered from tuberculosis of the urinary and genital organs. Here the two investigators found meningitis in 22 per cent., while in the 4,372 cases of pulmonary tuberculosis without affection of the urogenital system only 6 per cent. showed meningitis. Even the cases with tuberculosis of the bones (216) had 14 per cent. of meningitis. Therefore a distinct predisposition of persons suffering from urogenital tuberculosis for meningeal tuberculosis is evident, especially in the cases of pure uropoietic tuberculosis, and less in the cases of pure genital tuberculosis. These figures apply only to adults, as genito-urinary disease of this kind is very rare in childhood. These observations seem to be valid only in Vienna, as in other statistics, collected by Simmonds, such conditions could not be found.

Hydrophobia in Vienna

There occurred in Vienna several cases of rabies recently which were traced to injuries caused by stray dogs. The animals were killed, but before this was done quite a number of other dogs had been bitten, and there is no way of telling at present which dogs are infected. Therefore the board of public health has issued a warning to the population to be on the lookout; details are given as to how dogs may become infected and what symptoms in the behavior of animals are suspicious. The people are instructed to have every wound carefully attended to in the special "rabies" department of a certain Vienna hospital. Details are published of the results of treat-

ment (by injections) of cases of rabies in this hospital, showing that during the last year more than 700 cases from the whole of the empire have been successfully treated with only one death, which was due to gross negligence on the part of the patient. Altogether in Vienna we are comparatively free from this disease, owing to the severe restrictions on the keeping of dogs, the constant use of a muzzle and the destruction threatening every dog caught in Vienna without a muzzle.

ROME LETTER

(From Our Regular Correspondent)

Rome, Jan. 22, 1913.

The Army Medical Service in Africa

In a colonial war, such as the recent Italo-Turkish conflict, the importance of medical assistance is augmented by the frequency of cases of infectious native diseases, such as are scarcely known in Europe. Due praise must be given to our government for realizing the necessity for sufficient medical help, and every acknowledgment is also due to the military medical authorities, to the Red Cross, and to the sanitary inspectors.

WORK OF SANITATION

When the Italians landed in Libya the existing sanitary conditions aroused the worst possible fears. There was indescribable filth and negligence everywhere, and cholera and small-pox were raging among those of the inhabitants left behind, consisting chiefly of beggars and aged folk. The necessity of combating this state of affairs was most urgent in order to protect the doubly valuable lives and health of our soldiers. The Arabs merely threw the bodies of the cholera victims into the streets; the water of the wells was infected; in many places no water at all was to be obtained; there was no trace of sanitary inspection or any control over the food and drink offered for sale. Whenever possible, new wells were immediately sunk, the old ones were purified, and when the local supply was insufficient or entirely lacking, excellent water was transported from the Serino at Naples. The police supervision of sanitary conditions, and the regulations for public health and hygiene such as exist in all Italian communes were instituted. Numerous dispensaries, especially for eye diseases and female complaints, were established, and also naval medical inspection and a naval hospital. By degrees some order was brought into the lives of the natives, and they became accustomed to report cases of infectious disease, and to obtain permission to bury their dead. All inhabitants, whether they wished it or not, were inoculated, and a hospital for civilians was also established. Dirty lymph, etc., was collected and burnt, and all materials still serviceable were disinfected. The native population was placed under the surveillance of special physicians, and persons suffering from infectious diseases were gradually discovered and isolated.

The commonest diseases of the natives are trachoma, malaria, typhus, recurrent fever, dysentery and skin diseases due to deficient cleanliness. The strenuous exertions of the physicians and of the sanitary officers, helped by the large supply of necessities sent from Italy, were crowned with success; to-day we can look at the result obtained with satisfaction. Many foreign journals which have not been accustomed to spoil us with praise, such as the London *Times* and the *Lancet*, have acknowledged that we have entirely transformed the sanitary conditions of Libya.

CARE OF THE WOUNDED

Not only did the government spare no means, but also private charity was active in the work, especially in caring for the sick and wounded soldiers. Every man contributed his share either of money or personal help. Noticeable, too, was the help given by women, from humble work-women to women in fashionable society.

At the beginning of the war two steamers were sent out by the government with orders to collect the sick and wounded soldiers and to bring them back to Italy as soon as their condition allowed, in order to relieve the African hospitals. During the first months of the war when we had very little territory, these two ships coasted backward and forward, collecting the wounded after each battle, and thus preventing the accumulation of a number of sick in the rear of the army. The Italian Red Cross also fitted out a hospital ship, with twenty-five volunteer nurses each doing a month's service on board. Among the women of high rank who served their country in this way there was even a member of the royal family, the Duchess of Aosta, who worked on equal terms with the other nurses. No one was allowed to address her as "Royal Highness"; she insisted on being called "Signora Aosta." Naturally these examples helped to make the service popular.

CHARACTER OF WOUNDS MADE BY PROJECTILES

Weapons of the most various models were used by the Arabs and Turks, but those with large caliber bullets (11 mm. by 14.4 mm.) were in the majority. Observation of the wounds caused by these projectiles showed severe and extensive anatomic lesions. The large bullets of the Turks and Arabs penetrating crookedly into the bodies caused irregular, mangled wounds. It is true that the greater inclination in the course of a projectile would theoretically mean an advantage to the enemy, because the force is lessened. But the conditions of the fight in Libya (at least during the first months) were more favorable to the employment of such weapons, on account of the first battles being fought at close quarters. Accurate knowledge of the lay of the land and incredible boldness enabled the enemy, creeping through hollow places like snakes, to crawl close up to the Italian positions. Fired from so short a range, the shots had sufficient force to mangle the bodies of the wounded; they complicated the simplest wounds, which showed extraordinary mangling and contusions, so that the progress of healing could not be begun until all infected tissue had been eliminated. Consequently it took the wounds a long time to heal. The scars of these wounds are exceptionally long and irregular, and when on the face are most disfiguring. Another serious feature of the shots was that they often tore and carried into the wound pieces of clothing, and from this septic poisoning often followed. A bad result of the injuries made by these shots was also the free and frequently mortal bleeding of wounds even from small barrels. If on the contrary the small-caliber Italian shots inflicted wounds even with large barrels the blood was forced to collect in the deep tissues, and there formed large coagulations, which, pressing on the injured artery, forced the bleeding to stop. This fact was frequently noticed in the Russo-Japanese war, in which both armies were supplied with weapons of small caliber and large power.

Wounds made by the small-caliber, large-power shots showed, on the contrary, slight contusion of the sides and bottom; the sides were smooth and could be easily cleaned and attended to, and healing was quick and sure. Even when the bullet went through the muscles the healing did not take more than about ten days. Even wounds in the thorax and the abdomen healed quickly; the small holes the bullets drilled in their entry and exit were covered in a short time with a brownish crust, and under this natural closure the healing was quite aseptic. Again, while the Arabo-Turkish shots, if they hit the head, exploded, shattering the skull and carrying the splinters into the substance of the brain, so that the unfortunate men thus wounded were brought dying into the hospital, the results of our shots were far slighter. For example, in a night attack, the Sheik Isa Ben Gituil of the tribe of Hassu was taken prisoner, having a wound in the left wall of the cranium. The bullet had remained in the bone of the skull. Healing followed a natural, smooth, aseptic course and the man was completely cured. The natives are right in calling the small-caliber arms "weapons which do not kill."

ENDURANCE AND OTHER CHARACTERISTICS OF THE ENEMY

As in all similar cases, one must of course take into consideration the extraordinary strength of physical resistance of the enemy, and the incredible ease and quickness with which these half-wild tribes are healed. Their sensitiveness is far less than that of more civilized peoples. For example, a Bedouin who had been hit by a grenade was brought for immediate aid into the surgical ward of the hospital. A splinter from the grenade had torn the abdomen, and another splinter had carried off the right hand. The intestines had to be sewn up in several places, and the remaining part of the forearm amputated. The wounded man followed these surgical operations with interest, gave no sign of pain, and even from time to time thanked the operator. After the application of the bandages he insisted on being taken to his home, where with the utmost unconcern and an excellent appetite he consumed a quantity of dates. A European, as the physician said in his report, would probably have died under the knife, and certainly would have been brought through only with great difficulty. Our physicians, moreover, have earned from the native population universal sympathy and respect in return for the willing and ready help which they gave even in cases of ordinary illness. The Arab calls our doctor "the chief of all" and says that the *Achim* (doctor) comes directly after Allah. The Arab women seek help confidently from the dispensaries, even without the escort of their husbands, and

thank the doctors warmly for their assistance, saying "May Allah grant thee healing of the soul, as thou givest us healing of the body." Thus our physicians in this purely humanitarian work also effect a political mission, in helping to gain the sympathy of the natives.

Unfortunately these good results cannot be gained without many victims, for the nature of the fight ordains that the ambulance corps suffer many more losses than would be the case in a European war. Some of our colleagues fell while doing their duty on the field of battle. They lost their lives where they had given all their strength to help the unfortunate wounded. Their noble office did not protect them from the battle-fury of the enemy. One of them was killed in so barbarous a manner that my hand trembles when I think of him, and I wonder how long he waited for death, as he lay, nailed to a cross, on the ground. Many sorely wounded never ceased up to their last moment to try to ease the suffering of those who lay stricken around them. Like every war this one also has not only caused wounds, but wakened to life strength and virtue; but the moral and scientific organization of our military medical corps has far surpassed our own hopes, and filled us with a just pride and gratitude to those brave men who offered themselves as victims, in the conviction of doing nothing more than their duty.

Association News

THE MINNEAPOLIS SESSION

Special Trains to the Annual Session of the American Medical Association

There will be as usual special trains to carry the members, their families and friends to the next annual session of the American Medical Association at Minneapolis, June 17-20. To make the trip in such company is one of the privileges associated with the meeting. These special trains—and also special cars attached to regular trains—will be sent from several points in the United States. Several will go from Chicago, as a central point, and as the main gateway from the East, the South and a large part of the central territory. It is interesting to note in this connection that some competent and widely traveled observers declare that the train-service between Chicago and Minneapolis is not surpassed in comfort and elegance by the service between any other two cities in the world. Whether or not this be strictly true, at least it is a fact that the competition between the seven roads which run from Chicago to the Twin Cities is such as to ensure the passengers splendid train-service and all modern conveniences.

By arrangement with the Association's Committee on Transportation and Place of Session, the C. B. & Q. Railway—the Burlington Route—will run the American Medical Special. We note below a few details concerning this train, and other special trains will receive mention from week to week in THE JOURNAL. In the near future there will be a list of Minneapolis hotels and rates published, so that members may secure accommodations early. Excursions to Glacier Park, Yellowstone Park, etc. will also be taken up.

The American Medical Special will leave Chicago on the Burlington Route at 8:30 p. m., Monday, June 16, and will arrive in Minneapolis at 8:30 a. m., Tuesday, June 17. The equipment will include compartment and drawing-room cars, dining-cars, buffet club car and an observation car. The last-mentioned is to provide extra opportunity for observing the beautiful scenery which characterizes the upper Mississippi, the east bank of which is closely followed by the Burlington Route for almost 300 miles. Any one interested is invited to address any representative of the Burlington Route, asking for a special Mississippi River folder, which describes the beauties of the trip in detail. Reservations on this train should be made through Dr. J. R. Pennington, chairman of the Committee on Transportation and Place of Session, Room 1112, 31 North State Street, Chicago, or through any Burlington Route representative. Members are requested to make reservations as far in advance as possible, so that the committee may be able to order a sufficient number of high-grade cars for the comfort of all.

Marriages

GEORGE OLIVER COFFIN, M.D., Kansas City, Mo., to Miss Ida Stocking of Goff's, Kan., at Liberty, Mo., January 29.

HAYES H. DUTTON, M.D., Paragon, Ind., to Miss Ida Reid of Lewisville, Ind., at Martinsville, Ind., January 25.

ROY K. GODDARD, M.D., to Miss Bonnie Stevenson, both of Mounds, Okla., at Sapulpa, Okla., January 22.

ARNOLD A. SAMORONI, M.D., Schenectady, N. Y., to Miss Ilna Montesi of Brooklyn, January 29.

CHARLES WILLIAM GROETSCH, M.D., to Miss Louise Buhler, both of New Orleans, February 1.

MYRON C. BAKER, M.D., U. S. Navy, to Miss Helen McKee, at Vallejo, Cal., January 14.

FREDERICK A. KOHN, M.D., to Miss Tilda Ehrman, both of Chicago, January 27.

ENOCH MATHER, M.D., to Miss Anna M. Briscoe, both of Detroit, January 25.

Deaths

Daniel B. Cliffe, M.D. University of Louisville, Ky., 1842; for nearly fifty years president of the Nashville and Decatur Railroad; in 1860 professor of anatomy in Shelby Medical College, Nashville; surgeon in the Confederate Service throughout the Civil War; a director and later vice-president and president of the National Bank of Franklin, Tenn.; died at his home in that city, January 22, from pneumonia, aged 90.

James Percival Tuttle, M.D. University of Pennsylvania, Philadelphia, 1881; a member of the American Medical Association, New York Academy of Medicine and American Proctologic Society; first lieutenant Medical Reserve Corps, U. S. Army; professor emeritus of rectal surgery in the New York Policlinic Medical School; died at his home in New York City, January 31, from diabetes, aged 56.

Albert Clinton Aldrich, M.D. Harvard Medical School, 1883; formerly a member of the American Medical Association; a member of the Board of Health of Somerville, Mass., and assistant physician at the State Prison, Charlestown; was stricken with paralysis while making a professional call in Winchester, January 29, and died a few minutes later, aged 55.

Helen Paschall Proctor, M.D. Women's Medical College of Pennsylvania, Philadelphia, 1905; a member of the Medical Society of the State of Pennsylvania; physician to the gynecologic department of the College Hospital; died at her home in Philadelphia, January 23, from rupture of an ovarian cyst, complicating labor, aged 41.

John Owens Hughes, M.D. Rush Medical College, 1867; one of the oldest practitioners of northwest Chicago and a resident of Norwood Park; a veteran of the Civil War and a member of the Illinois State Medical Society; died suddenly while making a professional call near his home, February 5, from heart disease, aged 75.

Ephriam M. Epstein, M.D. College of Physicians and Surgeons, New York City, 1859; first president of the University of South Dakota, Vermillion; formerly a practitioner of West Liberty, W. Va., and instructor in science in Bethany College; died at his home in Chicago, January 26, from senile debility, aged 84.

George H. Sanderson, M.D. Missouri Medical College, St. Louis, 1886; a member of the State Medical Association of Texas; for many years health officer of San Saba County and local surgeon for the Gulf, Colorado and Santa Fe Railroad; died at his home in San Saba, January 25, from peritonitis, aged 51.

Robert Parker Mars Ames, M.D. Jefferson Medical College, 1880; for several years an official of the U. S. P. H. Service; a member of the American Medical Association; later a practitioner of Springfield, Mass.; died in the Wesson Memorial Hospital in that city, January 25, from diabetes, aged 56.

Wade Allison Lewis, M.D. Western Reserve University, Cleveland, O., 1904; formerly assistant physician of the National Tube Company at Lorain, O.; died at his home in Amherst, O., January 17, from acute congestion of the lungs, superinduced by whooping-cough, aged 29.

Daniel William Hayes, M.D. Medical School of Maine, Brunswick, 1897; of Brownsville Junction, Me.; a member of the Maine Medical Association; local surgeon of the Canadian Pacific Railway; was instantly killed in a collision between trains at Onawa, January 21, aged 42.

Wilbur Fisk Litch, M.D. Jefferson Medical College, 1865; a member of the American Medical Association; dean of the faculty and professor of materia medica and therapeutics in the Pennsylvania College of Dental Surgery; died at his home in Ardmore, Pa., Dec. 25, 1912, aged 72.

Jesse Mercer Pace, M.D. Tulane University, New Orleans, 1858; professor of diseases of children in the Southwestern University Medical College, Dallas, Tex.; one of the oldest and most prominent practitioners of Dallas; died at his home, January 28, aged 76.

Sparrow T. Gregg, M.D. Jefferson Medical College, 1887; for many years secretary of the Belmont County (O.) Medical Association and local surgeon of the Baltimore and Ohio System; died at his home in Mount Union, Ia., January 22, aged 54.

Alfred G. Abdelal, M.D. University of Montpellier, France, 1852; a veteran of the Civil and Franco-Prussian Wars; for many years a practitioner of Lawrence, Kan.; died at his home in Kansas City, Mo., January 25, from senile debility, aged 80.

Colwell D. Hale, M.D. Cleveland University of Medicine and Surgery, 1877; one of the founders of the Syracuse (N. Y.) Homeopathic Hospital; died at the home of his daughter in Syracuse, January 21, from cerebral hemorrhage, aged 71.

Alfred Irving Morse, M.D. Tufts College Medical School, Boston, 1910; a recent appointee in the U. S. P. H. S.; died in the Homeopathic Hospital, Boston, January 29, from septicemia, contracted while in discharge of his duties, aged 26.

George Washington Jenckes, M.D. Harvard Medical School, 1854; a member of the Rhode Island Medical Society and president emeritus of the Woonsocket Hospital; died at his home in Woonsocket, January 27, from senile debility, aged 83.

Walker Dannals Engle, M.D. Western Pennsylvania Medical College, Pittsburgh, 1901; a member of the American Medical Association; died at his home in Aliquippa, Pa., January 16, from septicemia, due to an operation wound, aged 39.

George Harper Donaldson, M.D. Missouri Medical College, St. Louis, 1875; a member of the American Medical Association and a Confederate veteran; died at his home in Kansas City, Mo., January 23, from heart disease, aged 66.

William T. Black, M.D. Pennsylvania Medical College, Gettysburg, 1857; surgeon of Volunteers during the Civil War and thereafter a practitioner of Calais, Me.; died at his home, January 14, from pneumonia, aged 81.

William Patty, M.D. Eclectic Medical Institute, Cincinnati, 1866; a retired practitioner of Greenville, O.; for many years a practitioner of Pleasant Hill; died at his home, January 23, from cerebral hemorrhage, aged 84.

Berthold L. Lewin, M.D. University of Bonn, Germany, 1883; of Cleveland; who had recently returned from Germany; was found dead in his apartment, January 23, from the effects of an overdose of morphin, aged 53.

Louis B. Balliet, M.D. University of Pennsylvania, Philadelphia, 1854; the oldest practitioner of Lehigh County, Pa.; died suddenly at his home in Allentown, January 28, from senile debility, aged 80.

Isaac Henry Foust (license, North Carolina, 1898); a member of the Medical Society of the State of North Carolina; died suddenly at his home in Salisbury, January 21, from heart disease, aged 64.

James Findlay Loree, Jr., M.D. Denver and Gross Medical College, Denver, Colo., 1909; formerly of Ann Arbor, Mich.; died at his home in Boise, Ida., January 25, from pneumonia, aged 27.

James Fleet Booth, M.D. Atlanta (Ga.) School of Medicine, 1906; was shot and killed by his wife as the outcome of a quarrel at their home in Lake Providence, La., January 23, aged 32.

Charles Rollin Austin, M.D. Medical College of Ohio, Cincinnati, 1894; postmaster of Byesville, O.; who disappeared January 15, was found drowned in Will's Creek, January 17, aged 41.

George Warren Abney, M.D. University of South Carolina, Columbia, 1874; for several years local surgeon of the Plant System; died at his home in Jacksonville, Fla., January 18, aged 60.

Charles L. Thompson, M.D. Hahnemann Medical College, Chicago, 1882; a member of the staff of the Hackley Hospital, Muskegon, Mich., died at his home in that city, January 26, aged 63.

George Belding Smith, M.D. New York University, New York City, 1881; a member of the American Medical Association; died at his home in Anacortes, Wash., about January 19, aged 56.

Charles Edwin Cummings, M.D. Bellevue Hospital Medical College, 1883; local examiner in Seattle for the Fraternal Order of Eagles; died in that city, about Dec. 6, 1912, aged 53.

J. Emmett Wimp, M.D. Kentucky School of Medicine, Louisville, 1890; died at his home in Louisville, January 23, from tuberculosis, following an operation for appendicitis, aged 52.

Franklin J. Magee, M.D. Hahnemann Medical College, Chicago, 1881; a veteran of the Civil War; formerly of Santa Clara and San Jose, Cal.; died recently in Eugene City, Ore.

Thomas John Farleigh, M.D. New York University, New York City, 1875; of Bay View, Wash.; died in the Burlington (Wash.) Hospital, Dec. 10, 1912, from pneumonia, aged 65.

Horace J. Emery, M.D. Queens University, Kingston, Ont., 1884; a member of the American Medical Association; died at his home in Spokane, Wash., January 14, aged 54.

John T. Cross, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1865; a pharmacist for many years; died at his home in Farmington, Ia., January 28, aged 71.

Charles T. Brockway, M.D. St. Louis College of Physicians and Surgeons, 1893; health officer of Brookston, Ind.; died in St. Elizabeth's Hospital, January 12, aged 49.

Alfred Leubbers, M.D. Marion-Sims College of Medicine, St. Louis, 1896; of University City, St. Louis; died at his home, January 27, from nephritis, aged 46.

William Herschel Brown (license, Texas, 1907); formerly a member of the American Medical Association; died at his home in Coffeyville, Texas, Dec. 28, 1912.

William Clanton, M.D. University of Pennsylvania, Philadelphia, 1855; died at his home in Pickens, Miss., January 10, from pneumonia, aged 81.

Franklin L. Snell (license, Michigan, 1900); a practitioner since 1875 and a veteran of the Civil War; died at his home in Kalamo, January 26.

Ames Messer Jackson, M.D. Dartmouth Medical School, Hanover, N. H., 1873; died at his home in Fall River, Mass., December 25, aged 72.

Samuel N. Metzler, M.D. Cincinnati College of Medicine and Surgery, 1877; died at his home in Indianapolis, about Dec. 31, 1912, aged 63.

Eugene Elam Brown, M.D. Hospital College of Medicine, Louisville, Ky., 1882; died at his home in Martinez, Cal., January 13, aged 55.

Edgar C. Quinby, M.D. Cleveland University of Medicine and Surgery, 1881; died at his home in Titusville, Pa., about January 25, aged 56.

Hannah Russell Bennett (license, Wisconsin, 1899); died at the home of her step-son in Monroe, Wis., January 22, from acute bronchitis.

W. Riley Wood (license, Tennessee, 1889); died at his home near Lexington, Tenn., about January 17, from pneumonia, aged 62.

Louis Pfandhoefer, M.D. University of Buffalo, N. Y., 1886; died at his home in Falls City, Ore., January 9, from pneumonia, aged 60.

Francis Hodgson Orme, M.D. New York University, New York City, 1854; died at his home in Atlanta, Ga., January 28, aged 78.

Robert D. E. Follweiler, M.D. Baltimore University School of Medicine, 1898; died at his home in Allentown, Pa., January 27, aged 38.

Charles A. Hillweg, M.D. Hahnemann Medical College, Chicago, 1878; died at his home in Corning, Ia., about January 26, aged 56.

Charles Ryker, M.D. Cincinnati College of Medicine and Surgery, 1870; died at his home in Manville, Ind., January 18, aged 77.

John T. Flanagan, M.D. University of Louisville, Ky., 1880; died at his home in Bosworth, Mo., January 16.

M. Z. Totten (license, Arkansas, 1903); died at his home in Varner, January 26, from pneumonia, aged 57.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

SYRUP COCILLANA COMPOUND

The following letter was received from Dr. George P. Tolman, Watsonville, Cal.:

"*To the Editor:*—The enclosed advertisement was underscored and mailed to me by my druggist. The properties of cocillana are similar to ipecac. The dose of the fluidextract is from 10 to 20 minims. Each fluidounce of the extraordinary (!) dark-colored cough marvel of P. D. & Co. contains 40 minims of the tincture. If the tincture of cocillana is 10 per cent. (the average tincture strength) you can see that to get a minimal dose of the drug you would have to take 2½ fluidounces of the syrup.

"Query: Can we still hang on to the old-fashioned cough mixtures freshly compounded by our druggists or shall we put our shoulders to the wheel and help P. D. & Co. save the nation and make a few dollars for the druggist?"

The following is a reproduction of the advertisement referred to:

A cough syrup with a history.

Syrup Cocillana Compound established itself with the medical profession in a single season. It was introduced in 1906. The secret of its prompt recognition lay in its unusual composition. The formula showed a rare combination of astringents and sedatives. It quickly made a "hit" with physicians. The name "Syrup Cocillana Compound" soon began to appear on prescriptions. Today this agent is the most widely prescribed of all preparations for cough.

Syrup Cocillana Compound is a profitable product for the druggist to sell. It commands a good price. Being totally unlike the common, ordinary dark-colored "cough mixtures," it does not enter into competition with them. Be prepared to dispense it.

Supplied in pint, 5-pint and gallon bottles.

Home Offices and Laboratories, Detroit, Michigan. **PARKE, DAVIS & CO.**

"The secret of its prompt recognition lay in its unusual composition." Nay; its prompt recognition lay in liberal and persistent advertising. "It quickly made a 'hit' with physicians," —because too many physicians, like other human beings, are susceptible to the psychology of advertising. Here is the "unusual composition," as given by the manufacturers:

"Tinct. Euphorbia pilulifera, 120 mins.; Syrup Wild Lettuce, 120 mins.; Tinct. Cocillana, 40 mins.; Syrup Squill Compound, 24 mins.; Cascarin (P. D. & Co.), 8 grs.; Heroin hydrochloride, 8-24 gr.; Menthol, 8-100 gr."

As we have said before[1] Parke, Davis & Co. should be proud of this "elegant specialty." It would be hard to find a better specimen of a shotgun prescription; not only does the prescription contain eight ingredients, but one of these ingredients (compound syrup of squill) itself contains three.

As our correspondent correctly states, the drug from which the name (not the action) of the preparation is derived comes from Bolivia and has properties similar—but evidently inferior—to ipecac. That it possesses but little therapeutic value is perhaps best evidenced by the fact that, in spite of the propaganda made for it by Parke, Davis & Co., neither the drug nor any preparation of it is listed, so far as we know, by any other large pharmaceutical house, with one exception. Besides cocillana the preparation contains two other obsolete drugs, wild lettuce and euphorbia pilulifera. The activity of the "cough syrup," it is needless to say, depends in the main on the drug which is more or less buried in the published formula: heroin hydrochlorid. At one time Parke, Davis & Co. admitted that the preparation owed its chief value to heroin. In a letter to the Council on Pharmacy and Chemistry the firm said:

"The physiologic action of this syrup is that which would be suggested by the constituents. Because of its activity the most prominent action would be that characteristic of heroin hydrochlorid."

Without doubt the important ingredient, from the point of view of therapeutic potency, is the heroin; and it is this drug doubtless, that makes the mixture a good "repeater." Syrup Cocillana Compound is a nostrum sailing under false colors. Whether its continued use is due to its mysterious, meaningless, misleading name or merely to insistent and persistent advertising methods of Parke, Davis & Co. is a question. Neither explanation is any credit to the medical profession which tolerates it, or to the physician who prescribes it.

1. THE JOURNAL A. M. A., March 18, 1911, p. 834.

"MAIGNEN PULV."

One of the "side-shows" which interested the throng on the Board Walk at the last meeting of the American Medical Association at Atlantic City was the exhibition of a "wonderful" antiseptic, germicide and cure-all whose virtues (?) were demonstrated by means of the microscope. An investigation showed that the individual in charge took a drop from a bottle containing water, hay and some living infusoria, placed it under the microscope on a slide and then allowed a solution of the "wonderful" remedy to run under the slide, when, *mirabile dictu*, the poor delicate, harmless infusoria shriveled up into formless masses. The whole thing was so absurd and the fake so transparent that the subject was dismissed without further thought by physicians, even though the "show" had been set up close to the Exhibition Hall with the evident intent of attracting the medical profession. It appears, however, that the "remedy" is being exploited to physicians in earnest, and queries are being received from physicians regarding this palpable humbug. For this reason we present the following brief discussion of the preparation:

Maignen Pulv. is exploited by J. P. Maignen, Philadelphia, and we are told is "prepared for the physicians by the chemists of the Maignen Institute." An advertising circular tells us that Maignen powder is:

". . . a combination of harmless mineral salts, whose individual bactericide power is low in the scale of antiseptics, but whose collective power is very high, by reason of the reactions which take place between the different salts in a moist environment."

The use of this powder is recommended for a long list of diseases and for application in various ways to lesions of the skin and subcutaneous tissues and to the various mucous membranes of the body. The circular gives a report of the Lederle Laboratories of New York which shows the material to possess a germicidal power 3.75 times as great as that of phenol! The circular says:

"In ordinary Stomach Troubles give the patient, whenever distressed, a cup of hot water with half the amount of powder lifted on a dime. This will correct the acidity, stop the production of toxins, and bring the mucous membrane to normal."

What are the harmless mineral salts from the interaction of which a powerful germicidal effect is obtained? Analysis made in our chemical laboratory showed the powder to be apparently a mixture, consisting largely of calcium oxid or hydroxid and sodium carbonate, which on treatment with water results in a mixture containing calcium carbonate and the strongly alkaline sodium hydroxid.

Thus this "discovery" makes use of the well-known operation of leaching a mixture of ashes and lime to procure lye, except that in this case sodium carbonate is used instead of

the potassium carbonate of the ashes. The germicidal powers of strong alkalies have long been known, but the inconvenience of their application to tissues and mucous membranes has prevented their use. That they will be of service when sufficiently diluted not to irritate the tissues is improbable, for the antiseptic power of such solution is slight and the disinfectant value practically nil.

The recommendation for internal use is absurd when we consider that the dose called for ("half the amount of powder lifted on a dime") corresponds approximately to an amount of alkali sufficient to neutralize the acid in 100 c.c. of ordinary stomach contents. This quantity is less than that present after an ordinary meal. If the patient should happen to have just that amount in the stomach, his symptoms from acidity would be relieved, but he would have neither hydrochloric acid nor alkali to prevent fermentation; but usually the amount of stomach contents is much greater than this and the acid would be only partially neutralized by the medicine, which, having lost its alkalinity, has also lost its disinfecting power. The other claims made for this wonderful powder present a similar disregard of the conditions under which it is to be applied.

It is evident that neutralization with an acid will completely abolish the germicidal power of this preparation. As soon as it is taken into the acid stomach it has no more power to destroy germs than so much salt. In view of this it would appear that the medical profession will have to look elsewhere than to Maignen Pulv. for a treatment of such diseases and ailments as diphtheria, laryngitis, whooping-cough, stomatitis, tonsillitis, mastitis, intestinal catarrh, cholera, typhoid fever, cholera morbus, enteric fever, dysentery, leprosy, tuberculosis, conjunctivitis, ophthalmia neonatorum, anthrax, epithelioma and gastric catarrh, for all of which it is recommended.

"AN EXAMPLE OF ETHICS FOR DOCTORS"

The *Sun* (New York) said editorially, February 2:

"Ethics is regarded as a sine qua non in medicine, whereas in business it is sometimes supposed to be more honored in the breach than the observance. That the doctor may obtain an object-lesson in ethics from a business firm is demonstrated in a recently issued circular of a leading mail-order house, in which this statement is made: 'We have decided to restrict our line of goods to those officially approved by the Council on Pharmacy [and three other official authorities mentioned by title]. Thus the highest quality as well as absolute uniformity are assured for these official preparations. We believe that the publications named contain all that is valuable in the field of medicine. If any more than the simple home remedies listed are needed we are frankly of opinion that they should consult their family physician rather than waste time and money in experimenting with drugs. In our opinion the evils chargeable to patent medicines are likely to continue so long as these products have free access to the channels of publicity.'

"What a homily this is on the present growing practice of physicians to prescribe proprietary secret (alias patent) medicines for their unsuspecting patients! The *Sun* has called attention to this evil, characterizing it as a menace to the good repute of the doctor. We have pointed out that the latter's dependence on the statement of ingredients on the label may bring bitter fruit to his patient and himself, that a proprietary drug preparation may be easily copied by the patient and by him bought without his prescription or even transferred to a friend, as is often done. In this manner the doctor loses patients, and the sick, whether their illness be real or imaginary, may be damaged by medicines taken without diagnosis or medical supervision.

"That the proprietary drug combinations are advertised at large expense in the regular medical journals with few exceptions is proof that their use by physicians is increasing. There is only one explanation for the avoidance of official preparations by physicians, a practice which even the business firm referred to points out as indefensible in ethics: indolence and desire to dismiss the case as speedily as possible. The ingredients of a physician's prescription should be written calmly in Latin terms so that the layman may not injure himself by its surreptitious use. It is the course of safety to dismiss any physician who dashes off a prescription for X & Co.'s Tonic or Dingalen, Propothin (these are fictitious terms) or other fancy proprietary drug. Neither the legitimate druggist nor the patient will be injured by this course."

AUBERGIER'S LACTUCARIUM—A PROTEST AND A REPLY

In THE JOURNAL, Nov. 9, 1912, under the above heading, we published some facts relative to this preparation. We have received a nine-page communication from Comar & Co. of Paris, the promoters of Aubergier's Syrup of Lactucarium, in which they take issue with some of the statements in our article. The company claims that a possible reason for the difficulty experienced by Mr. Louis Emmanuel in trying to make the Syrup of Lactucarium from the crude drug is that he did not use the same variety of Lactucarium that it employs. Furthermore, it says that the presence of morphin in the product was acknowledged before the passage of the Food and Drugs Act. On more careful investigation, we find that this is true—that the presence of "a certain proportion of extract of opium" in the preparation was mentioned even before the federal Food and Drugs Act compelled the morphin content to be published on the label. Technically, then, THE JOURNAL was incorrect in making the implication that the medical profession was not apprised of the fact that Aubergier's Syrup of Lactucarium contained morphin; practically it was right. The information that Comar & Co. gave to physicians was buried in its advertising "literature" so that it is fair to assume that not one physician in ten thousand knew—previous to the Food and Drugs Act—that Aubergier's Syrup of Lactucarium contained morphin.

Correspondence

Opinions Desired on the Treatment of Puerperal Infection

To the Editor:—At the session of the American Medical Association at Atlantic City a committee was appointed to collect the opinions of representative obstetricians, gynecologists and general practitioners on this question: Should the puerperal uterus be emptied of ovular remnants in the presence of infection, and if so, when? The object of the committee is to obtain information which will enable it to formulate rules for the treatment of septic abortion and post-partum infection with retained placental fragments.

The chairman will, on request, send a printed blank to any general practitioner in order to receive his opinion on eight questions. The committee is most interested, however, in the first three questions, which are as follows:

1. A primipara with septic abortion, at three months, fever two days, the hemorrhage negligible, the ovum intact: What would you do?
2. A primipara with septic abortion, at three months, fever two days, hemorrhage negligible, the fetus expelled, placenta retained: What would you do?
3. A primipara, fourth day after full-term delivery, positive evidences of uterine infection, no hemorrhage, retention of ovular remnants suspected: What would you do?

The committee will be glad to have answers to these three questions from as many general practitioners as are willing to assist.

BARTON COOKE HIRST, M.D.
ROBERT L. DICKINSON, M.D.
JOSEPH B. DE LEE, M.D., Chairman,
5028 Ellis Avenue, Chicago.

Getting Together in Kansas—An Example to Emulate

To the Editor:—At the spring meeting of the medical society of a certain county in southwest Kansas, suggestion was made that one of the members of the society should be a candidate for the legislature, in order that the interests of physicians might be safeguarded by representatives from among the profession. This was determined because the interests of physicians were menaced by the last legislature and were also seriously threatened through the activities of the chiropractors and the League for Medical Freedom in the legislature which was to be chosen and is now in session.

After considerable discussion, it was decided that Dr. R. T. Nichols of Liberal (the county seat) should be the person to make the race. Dr. Nichols' popularity among the people had been attested by the fact of his election as mayor, and he had shown marked executive ability as well as much forcefulness of character in the conduct of the city's business.

Notwithstanding that the physician-candidate was a Democrat, while most of the members of the society were Republicans (Seward County is strongly Republican), they stood together "as one man" and succeeded in electing him. But the story does not end here: The doctors agreed not only that they would work for his election, which they did most heartily, but also that they would turn back all of his patients on his return from the legislature and pay him a per diem bonus as well while he was in attendance at the capital.

Dr. Nichols made his maiden speech the other day in the House, defeating the schemes of the enemies of the Kansas Food and Drugs Law by causing the untimely death of House Bill 76. This bill called for the reorganization of the State Board of Health, replacing the majority of the physicians on the board with laymen who are interested in the manufacture and sale of food and drugs. Incidentally, it might be remarked that the present Democratic governor (who won his election by a majority of 26 votes) was elected by the physicians of Kansas, 85 per cent. of whom voted for him as against the Republican candidate—the publisher of the Topeka *Capital* and a large number of other publications which carry nostrum advertisements. Dr. Nichols is ably assisted by two other physicians, one of whom ran on a platform of public health education, disregarding the platform of his own political party.

Is it not about time that the physicians of the country should emulate the example set by the Seward County Medical Society, and "get together"?

S. J. CRUMBINE, M.D., Topeka, Kan.

Medical Sectarianism

To the Editor:—You printed in your issue of Feb. 1, 1913, a paper by Dr. John Benjamin Nichols, entitled "Medical Sectarianism," which appeals so strongly to every one engaged in the practice of scientific medicine that I cannot refrain from expressing some faint appreciation of the author's admirable treatment of this vexing subject. I say "vexing" because the attitude assumed by even intelligent and cultured laymen in the consideration of this question is so hopelessly unfair and illogical that it is difficult for a physician to retain his equanimity in discussing the matter with them. Usually the advocate of scientific medicine finds so much to irritate him in the arguments of those who champion the sectaries that he grows hysteric and does harm rather than benefit to the truth.

To me it appears so desirable that all practitioners of scientific medicine acquire a true understanding of the burning subject of medical sectarianism that I venture to suggest to THE JOURNAL that it print Dr. Nichols' article in pamphlet form and scatter it broadcast among the practitioners in the United States.

J. DENNIS ARNOLD, M.D., San Francisco.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CALORIC FEEDING

To the Editor:—Please give some information on practical caloric feeding. W. S. T.

ANSWER.—The principle of caloric feeding is simply to determine the caloric value of the food, counting 4 calories for every gram of solid protein or carbohydrate and 9 calories for every gram of fat. This calculation is easily made when the composition of the food in fats, carbohydrates and proteins is known. For practical directions on this matter refer to the following articles; that by Levy, though it does not treat particularly of calories, is the most easily applied practical method of feeding infants.

Telmer, T.: Calorimetric Method of Infant-Feeding, *Arch. Pediat.*, January, 1909.
Ladd, M.: Caloric Value of Modified Milk in Its Relation to Infant-Feeding, *Arch. Pediat.*, March, 1908.
Ludlum, W. D.: Calorimetry in Infant-Feeding, *Long Island Med. Jour.*, September, 1909.
Bowditch, H. J.: A Convenient Method for Determining Caloric Values of Formulas Based on Percentage Feeding of Infants, THE JOURNAL, Oct. 16, 1909, p. 1265.
Lackner, E.: Heubner's System of Infant-Feeding Expressed in Calories and Energy Units, THE JOURNAL, Oct. 16, 1909, p. 1267.
Blauner, S. A.: The Caloric Method of Infant-Feeding, *New York Med. Jour.*, May 14, 1910.
Chapin, H. D.: Limitations of Caloric Method of Infant-Feeding, *Med. Record*, May 28, 1910.
Levy, D. J.: Simple Methods in Infant-Feeding, THE JOURNAL, June 22, 1912, p. 1925.
Hess, J. H.: A Study of the Caloric Needs of Premature Infants, *Am. Jour. Dis. of Child.*, November, 1911.
Howland, J.: The Fundamental Requirements of Our Infants' Nutrition, *Am. Jour. Dis. of Child.*, July, 1911.

TENOPLASTY IN CONTRACTURES OF TENDONS

To the Editor:—In the treatment of poliomyelitis with contractures of the hamstring muscles and resulting foot deformity, is it advisable to do a tenotomy and produce a stiff joint at the knee? If so, what is the ultimate result? Should the operation be done at an early age or not until the child is more developed? G. W. T.

ANSWER.—Contractures of tendons are amenable to treatment by tenoplasty, lengthening the tendons. Deformities, the result of tendon contractures, are relieved in that way, and in some cases, if necessary, by the transplantation of a tendon or a portion of a tendon. If carried out properly, such treatment does not result in stiff joints. In the case of paralysis, the tendon of the paralyzed muscle may be transplanted to a fully functionating muscle tendon, even of an opposing group, as for instance, an extensor tendon may be converted into a flexor tendon by proper transplantation. Practically all, or at least most, of the lost muscle power may be restored by tendon lengthening and tendon transplantation. These operations have been very successful in the treatment of the paralysis following anterior poliomyelitis. As to the age of the child before it is operated on, that is an open question. Some surgeons operate at any age, as soon as the deformity has become established; others will not operate on a child until it is at least 8 years of age.

In the following articles the subject is ably discussed:

Davis, G. G.: Surgical Treatment of Poliomyelitis, *Pennsylvania Med. Jour.*, December, 1911.
Allison, N.: Surgical Treatment of Paralysis Following Anterior Poliomyelitis, *Jour. Missouri State Med. Assn.*, January, 1912.
Allison, N.: Artificial Tendons and Ligaments in Surgical Treatment of Paralysis, *Am. Jour. Surg.*, January, 1912.
Lewis, D. D.: Surgical Aspects of Poliomyelitis, *Illinois Med. Jour.*, July, 1912.
Vulpius, O.: Tendon Transplantation in Infantile Spinal Paralysis, *Deutsch. med. Wchnschr.*, Sept. 5, 1912.
Peltesohn, S.: Surgical Treatment of Poliomyelitis, *Deutsch. med. Wchnschr.*, Oct. 24, 1912.
Stoffel, A.: Treatment of Spastic Conditions, *Therap. Monatsh.*, December, 1912; abstr., THE JOURNAL, Feb. 8, 1913, p. 486.

PREDETERMINATION OF SEX

To the Editor:—On page 328 of THE JOURNAL, Jan. 25, 1913, Weill has an article on the development of sex (*Monatsschr. f. Geburtsh. u. Gynäk.*, December, 1912, XXXVI). If he told how to control sex of offspring at will, I wish you would abstract it fully.

J. A. B., Hartshorne, Okla.

ANSWER.—The essential point in Weill's theory is the hypothesis that sex in offspring is the outcome of a contest between the spermatozoon and the ovum; if the spermatozoon is successful, the resultant offspring is a male, while if the ovum is successful the offspring is a female. The contest may be decided one way or the other, he believes, by the influence of diet, an excess of nourishment favoring the production of a female and a deficiency the production of a male. This he accounts for by the law of physics that the force of a moving body equals the mass multiplied by the velocity. The mass of the ovum is nearly 10,000 times that of the spermatozoon, while the velocity of the latter is nearly 500 times that of the former. Abundant food, especially plasm-forming, albumin-rich food, increases the size of both elements, and this tends to decide the contest in favor of the ovum, since the velocity of the spermatozoon is thereby retarded while the increase in its mass does not suffice to change the overwhelming preponderance in mass of the female element. An extra nourishing diet thus tends to turn the scale at conception in favor of a girl baby and a scanty diet in favor of a boy. Among the arguments he cites to support this theory are that in times of financial stress, after a war, etc., male chil-

dren are born in preponderant numbers; also that in polygamous countries 150 girls are born to each 100 boys, owing to the sexual exhaustion of the male procreator. Weill declares further that experience and breeding experiments have brilliantly confirmed his deductions.

The following references on the predetermination of sex may be found of interest:

The Determination of Sex, Correspondence, THE JOURNAL, May 2, 1908, p. 1441.
Blackman, M. W.: Theories of Sex Determination Resting on a Cytologic Basis, *Cleveland Med. Jour.*, April, 1908; abstr., THE JOURNAL, May 30, 1908, p. 1866.
Recent Research on the Determination and Heredity of Sex, Miscellany, THE JOURNAL, March 13, 1909, p. 914.
Schöner, Otto: Predetermination of Sex of Offspring Before Conception and Determination of the Sex During Pregnancy, *Beitr. z. Geburtsh. u. Gynäk.*, Leipsic, 1909, xiv, 341; abstr., THE JOURNAL, Dec. 11, 1909, p. 2042. Predetermination of Sex, ibid., 1912, xvii, 137; abstr., THE JOURNAL, July 13, 1912, p. 150.
McConnel, D.: Determination of Sex in Human Species, *California State Jour. Med.*, September, 1911; abstr., THE JOURNAL, Sept. 23, 1911, p. 1079.

SECRETARIES OF SURGICAL, GYNECOLOGIC AND OBSTETRIC SOCIETIES

To the Editor:—Please send me the names and addresses of the different secretaries of our principal surgical, gynecologic and obstetric societies. I wish this information in order to do some statistical work, and could likely find it in the directory, yet you should have later data on the subject.

CHARLES E. BARNETT, M.D., Fort Wayne, Ind.

ANSWER.—Following is a list of the secretaries of some of the principal American surgical, gynecologic and obstetric societies:

American Association of Obstetricians and Gynecologists, E. Gustav Zinke, 4 West Seventh Street, Cincinnati.
American Association of Railway Surgeons, Louis J. Mitchell, 132 North Wabash Avenue, Chicago.
Clinical Congress of Surgeons of North America, Franklin H. Martin, 31 North State Street, Chicago.
American Gynecological Society, Le Roy Broun, 148 West 77th Street, New York.
American Surgical Association, Robert G. Le Conte, 1530 Locust Street, Philadelphia.
Association of Military Surgeons of the United States, S. C. Stanton, 535 Dearborn Avenue, Chicago.
Congress of American Physicians and Surgeons of North America, W. R. Steiner, 4 Trinity Street, Hartford, Conn.
Southern Surgical and Gynecological Association, W. D. Haggard, Jr., 148 Eighth Avenue, North, Nashville, Tenn.
Western Surgical Association, Arthur T. Mann, Donaldson Building, Minneapolis.

SYPHILIS AS A CAUSE OF LOCOMOTOR ATAXIA

To the Editor:—Will you kindly inform me through the pages of THE JOURNAL what percentage of cases of locomotor ataxia is due to syphilis? ROBERT B. DEMPSLY, M.D., Vallejo, Cal.

ANSWER.—No positive facts are available that would make it possible to state definitely the percentage of cases of locomotor ataxia due to syphilis. The usual answer to the question, based on the opinions of the majority of authorities, would be 90 per cent. The extreme view—that held by Moebius, Brissaud and Babinski—is that syphilis is responsible in every case. Moebius expresses his opinion in the extreme statement: "Keine Tabes ohne Syphilis." While the general opinion of those who may be regarded as authorities on the subject is that tabes does not occur without syphilis, our positive knowledge on the subject does not warrant a definite statement to this effect.

ACTION OF HORSE-CHESTNUT—BOOKS ON CLINICAL MICROSCOPY

To the Editor:—1. Please give me the action of buck-bean (horse-chestnut) with antidote.
2. What is the best book on clinical microscopy?

E. G. LYONS, M.D., Lake Cormorant, Miss.

ANSWER.—1. It is not clear to what plant our inquirer refers. Buck-bean, *Menyanthes trifoliata*, is not usually considered poisonous, although the ingestion of large amounts is said to produce emesis. Horse-chestnut, buckeye, *Aesculus hippocastanum*, is commonly regarded as poisonous, although few authentic cases of poisoning have been reported. The bark and seeds contain a bitter, crystallizable, sternutatory glucosid, argyrescin. The alcoholic solution of argyrescin has been stated to be a specific for spasmodic contractions of the veins, and a tincture of the seed has been used for neuralgia of the viscera; but neither use is sanctioned by discriminating physicians. Poisoning by horse-chestnut is so rare that no routine method of treatment is recommended. Emesis or stomach lavage would probably be found serviceable, followed by stimulation if indicated.

2. Perhaps the most serviceable books on clinical microscopy will be those which are usually known as works on clinical diagnosis, of which we give a list:

Wood: Clinical and Microscopic Diagnosis, New York, D. Appleton & Co., $5.
Simon: Clinical Diagnosis, Philadelphia, Lea & Febiger, $5.
Emerson: Clinical Diagnosis, Philadelphia, J. B. Lippincott Company, $5.
Boston: Clinical Diagnosis, Philadelphia, W. B. Saunders Company, $4.
Webster: Diagnostic Methods, Philadelphia, P. Blakiston's Son & Co., $4.50.

The following are devoted especially to microscopy:

Cross and Cole: Modern Microscopy, Chicago Medical Book Company, Honoré and Congress Sts., Ed. 4, $2.
Carpenter: Microscope and Its Revelations, Philadelphia, P. Blakiston's Son & Co., $8.

ACTION OF QUININ

To the Editor:—I am able to add a little first-hand information to your reply to the query of Dr. Mauldin in THE JOURNAL, Jan. 11, 1913, p. 147, on the action of quinin and urea hydrochlorid.

Quinin used about the ear, irrespective of the amount used, is not attended by ringing. I judge this from the use of it in radical mastoid work. The time of contact when the drug is used as a gargle is too short to permit the production of anesthesia. The seat of pain is too deep to be influenced by any external anesthetic. Injected into the tissues quinin permits a painless incision of the abscess. It is readily absorbed from inflamed mucous membranes when it can be brought into direct contact for a sufficiently long time. I have used it for some years as the anesthetic of choice in all intranasal operations. It is applied in cotton tampons in the usual manner. A 5 per cent. solution is used. The tampons are changed from time to time, since mucus tends to collect more rapidly than when cocain is used. From ten to twenty minutes are required to produce anesthesia. After a satisfactory anesthesia is produced the vessels can then be contracted by the use of epinephrin. If the epinephrin is used with the quinin the absorption of the latter is delayed.

Its absorbability from inflamed surfaces is well illustrated by its use in dermatitis exfoliativa. Dr. French M. Smith of Lyndon, Kan., reports gratifying results from its use in this disease. I have no doubt that it will work as well in like skin affections.

Quinin does not injure the cornea, but it causes an unpleasant initial smarting and a hyperemia. Dilatation of the pupil is not produced. Quinin is in every way less desirable than cocain for use in the eye. ARTHUR E. HERTZLER, M.D., Kansas City, Mo.

THE WORK OF ALEXIS CARREL

To the Editor:—Some time last year there appeared in THE JOURNAL an article by Dr. Alexis Carrel on his remarkable work in tissue-grafting, organ transplantation, etc., which won the Nobel prize. Of course, every one has heard of it now through the newspapers and lay magazines, but I would like something more in detail. Please give me the reference to his article.

W. G. MORGAN, M.D., Nodaway, Iowa.

ANSWER.—The following articles by Dr. Carrel have appeared in THE JOURNAL since January, 1912:

Production of Antibodies by Tissues Living Outside of the Organism, Feb. 17, 1912, p. 477.
Preservation of Tissues and Its Application in Surgery, Aug. 17, 1912, p. 523.
Visceral Organisms, Dec. 14, 1912, p. 2105.

COUNTRY WATER-SUPPLY AND SEWAGE DISPOSAL

To the Editor:—Please refer me to some up-to-date books on water-supply and sewage disposal in country houses in which it is desired to install modern plumbing.

J. M. TAYLOR, M.D., Boise, Idaho.

ANSWER.—The following may be referred to:

Gerhard, W. P.: Water-Supply and Sewage Disposal of Country Homes, published by Van Nostrand Co., New York. Price, $2.
Booker, W. H.: Residential Sewage Disposal Plants, *Texas State Board of Health Bulletin*, September, 1912.
Fuller, G. W.: Sewage Disposal, published by McGraw-Hill Book Co., New York. Price, $6. (Reviewed editorially in THE JOURNAL, Aug. 3, 1912, page 372.)

SYNCYTIAL CELLS EVIDENCE OF PREGNANCY

To the Editor:—1. Is the presence of syncytial cells or syncytial tissue in material obtained from uterine curettage medicolegal proof of a previously existing pregnancy?
2. From a medicolegal standpoint, what importance is attached to the presence of portions of the syncytium in the material, when the question is to be decided as to whether or not a criminal abortion has been performed? L. W. HOWE, M.D., Coldwater, Mich.

ANSWER.—1. Yes.
2. The discovery of such material would, in our opinion, have no bearing in deciding whether abortion had been natural or criminal.

DOES FILTRATION OF WATER AVERT DANGER OF TYPHOID?

To the Editor:—A town of 2,000 population gets its water from a general well 80 feet deep. Under this town there seems to be a lake, for wherever the ground is pierced to the depth of 80 feet water is found. There are 40 feet of tight clay and 40 feet of sand. Several of the families of the town are boring down to the sand and are putting in privies. Is this safe? Or, to put it in another way, can or does filtration remove the germs of typhoid fever?

W. S. N.

ANSWER.—The information given is hardly sufficient to permit a direct answer. It is well established that properly controlled filtration through sand will remove typhoid bacilli. But under the conditions described, adequate control is not possible. No statement is made as to the distance between points where sewage is discharged and water is taken. Distance, of course, would be an important factor. Possibly underground channels might, after a time, be established, which would convey sewage pretty directly to the source of the water-supply. As a general principle, the admission of sewage to the sand layer would seem unwise. We suggest an examination of the local conditions by a competent sanitary engineer.

"TUBERCULAR" AND "TUBERCULOUS"

To the Editor:—Please explain the distinction between the words "tubercular" and "tuberculous," and give the correct usage.

THEODOR SATERSMOEN, M.D., Pelican Rapids, Minn.

ANSWER.—The word "tubercular" means "nodular," and may be applied to any nodular condition, either pathologic or normal, as a tubercular condition of bone or skin, tubercular leprosy, etc., whether or not it involves the specific germ of tuberculosis. The word "tuberculous" is correctly used in describing any condition, nodular or diffuse, due to a process initiated by the specific tubercle bacillus. While the words "tubercular" and "tuberculous" are used indiscriminately by some writers, especially in the sense which belongs to "tuberculous," we believe that the distinction is a useful one and should be preserved. Proper usage would also not employ "tuberculous hospital," etc., but "tuberculosis hospital" or "hospital for tuberculosis."

CAUSE AND TREATMENT OF BAKER'S ITCH

To the Editor:—In THE JOURNAL, Dec. 7, 1912, p. 2043, under the heading "Occupational Skin Diseases," I note the mention of baker's itch. I have a patient, a young baker, otherwise apparently in perfect health, who is subject to a rash during the mixing operation. It resembles a fine urticaria; very itchy, small wheals appear on the arms and chest. When the patient leaves the warm room, they disappear in a few minutes. Can you give me the cause and some suggestions as to treatment?

W. G. MCCULLOCH, M.D., Orono, Canada.

ANSWER.—Somewhat similar conditions are described in works on skin diseases and are classed under the head of eczema. Thus, Stelwagon lists among the class of eczemas known as trade eczemas baker's itch or eczema from flour and yeast. We can suggest only the ordinary treatment of eczema, the removal of irritating causes, and, if necessary, the cessation, at least temporarily, of the causative occupation.

GERMAN MEDICAL DICTIONARIES

To the Editor:—Where can the best German-English dictionary be purchased? Please give me any other pointers that would be of service to a physician wishing to obtain a good reading knowledge of German medical literature.

WILLIAM E. STEVENS, M.D., San Francisco.

ANSWER.—In THE JOURNAL, March 14, 1908, p. 902, and March 20, 1909, p. 980, is given information concerning three or four German-English dictionaries. In addition, the following may be referred to:

Flügel-Schmidt-Tanger: A Dictionary of the English and German Languages, in two volumes, published by George Westermann, Brunswick, Germany. Price, $16.50.

Lewis, B.: The Medical Vademecum in German and English, P. Blakiston's Son & Co., Philadelphia. Price, $5. (Reviewed in THE JOURNAL, July 30, 1910, p. 425.)

Lewin: German-English Medical Dialogue, Klinkhardt, Leipsic. Medical German, J. H. Vail & Co., New York. Price, $1.75.

CORRECTION IN ARTICLE ON "EARLY PARESIS"

To the Editor:—I observe that I made a substantial error in my article on "Early Paresis" (THE JOURNAL, Feb. 1, 1913). In describing Noguchi's test (page 355) I meant: "If to 0.1 c.c. of cerebrospinal fluid 0.5 c.c. of 10 per cent. butyric acid are added," etc., but not "5 c.c. of 10 per cent. butyric acid"

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Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

LEGISLATIVE NOTES

Reports received from state legislatures during the past week show a considerable amount of activity along public health lines. A summary by states follows:

ARKANSAS

The most important measure before the legislature is a bill creating a State Department of Health. The opposition is advancing the usual arguments against such a measure.

CALIFORNIA

An original plan for the study of eugenics is outlined in a bill introduced into the Senate, which provides for the marriage, under the control of the state, of twenty-five selected couples, who shall be maintained on a state farm, where they and their offspring can be reared under ideal conditions. The bill appropriates $100,000 for the purchase and equipment of a thousand-acre farm on which the twenty-five families are to live.

COLORADO

A bill restricting marriage has been introduced in the House. It forbids the marriage of imbeciles, idiots, persons mentally affected, habitual criminals, drunkards and drug habitués; also those suffering from transmissible diseases. The bill also forbids the intermarriage of white persons with negroes or Mongolians. A bill amending the medical practice act, and an osteopathic bill are also in the House.

IDAHO

H. B. 44 is a bill regulating marriage. It prohibits marriage between white persons and negroes, mulattoes or Mongolians, as well as the marriage of the insane, feeble-minded or imbecile or persons affected with epilepsy or venereal diseases, drunkards, morphin habitués, or persons divorced less than six months. H. B. 83 strengthens the board of health law. H. B. 84 makes minor changes in the vital statistics law.

ILLINOIS

S. B. 18 provides for a state sanatorium for tuberculosis, and appropriates $400,000 for its construction. This bill is in accordance with the recommendation of the State Board of Health, as well as with that of retiring Governor Deneen.

INDIANA

Bills have been introduced regulating the practice of dentistry, the sale of habit-forming drugs, establishing inebriate departments in county workhouses, providing for the registration of nurses, encouraging the destruction of rats, abolishing public drinking-cups, regulating the sanitation of steam passenger coaches, interurban and street cars, and regulating the ventilation of public buildings.

KANSAS

A joint resolution has been introduced, authorizing the regulation of a sanatorium for the study and treatment of cancer, and appropriating $50,000 for this purpose. A chiropractic bill and an osteopathic bill have been reported favorably by the judiciary committee. H. B. 3 amends the vital-statistics law providing for more local registrars. S. B. 48, establishing a board of registration for nurses, has passed both houses.

MAINE

Bills have been introduced, creating a State Board of Charities, and regulating medical expert testimony. A bill has also been introduced, making it a misdemeanor for any undeserving person to seek charitable medical and surgical services.

MICHIGAN

Bills have been introduced, placing the control of the Detroit Board of Health in the hands of the governor, extending the authority of the State Board of Health by giving it power to recommend the removal of municipal health officers who fail to do their duty, appropriating $50,000 to hire ten sanitary experts to make a sanitary survey of the state, requiring medical examinations as a condition for marriage licenses, and giving municipalities the power to establish farms for inebriates.

MINNESOTA

Bills have been introduced giving counties the power to establish sanatoriums for tuberculosis, giving any county, municipality or school district the right to employ a physician to give his entire time to medical supervision of the schools, prohibiting public drinking-cups and roller-towels, providing for a state tuberculosis commission and providing a board of health for Minneapolis.

MISSOURI

H. B. 283 regulates the practice of optometry. S. B. 135 creates the office of medical supervisor for state hospitals for the insane. S. B. 149 regulates the practice of optometry. S. B. 172 requires reports on occupational diseases. S. B. 239 provides for the prevention of smoke and injurious gases. S. B. 253 provides for the sanitation of hotels, and rooming- and boarding-houses. S. B. 262 authorizes the establishment of public tuberculosis hospital districts and of public tuberculosis hospitals therein.

NEBRASKA

A bill has been introduced to prevent the increase of the insane, feeble-minded and criminals.

NEVADA

Assembly Bill 7 provides for the examination of school children by teachers and physicians, subject to the rules of the State Board of Health.

NEW HAMPSHIRE

H. B. 308 authorizes the State Board of Health to purchase antitoxin and to establish stations for its free distribution.

NEW JERSEY

Bills have been introduced providing for a more rigid meat inspection, for the control of rabies, for the regulation of the temperature of refrigerator cars carrying milk, for the broadening of the functions of the Bureau of Vital Statistics and for an increased appropriation for health purposes.

NEW YORK

Bills have been introduced regulating the building of tuberculosis hospitals in cities, amending the law regarding midwives, providing for a hospital pension fund for the physicians or hospital employees disabled in the performance of duty, and regulating the sale of habit-forming drugs.

NORTH DAKOTA

A bill regulating marriage has been introduced into the Senate.

OHIO

Bills have been introduced providing for free antitoxin for the treatment of diphtheria, for an appropriation of $3,000 a year for two years for a preliminary survey of occupational diseases, and for a board of "naturopathic physicians."

OKLAHOMA

Bills have been introduced in the House requiring a certificate of health as a condition for a marriage license. Another bill provides for the appointment of two women on each of the boards of control of educational, penal and charitable institutions.

OREGON

Bills have been introduced in the legislature dealing with factory inspection, inspection of schools, regulation of nursing and the sale of habit-forming drugs, and forbidding roller-towels and spitting in public places. The sterilization bill has passed the House.

PENNSYLVANIA

Bills have been introduced forbidding the sale of cigarets, amending the medical practice act and providing for county tuberculosis hospitals; also a bill enlarging the administrative powers of the state board. The bill amending the medical practice act provides for five instead of four years' study in medicine, the additional year to be spent in hospitals.

NORTH CAROLINA

In his inaugural address, Gov. Locke Craig strongly recommended a law registering births and deaths. A bill, closely following the model bill, has been introduced in the legislature and has passed to second reading in the House. A bill has been introduced raising the standard of medical education in the state.

SOUTH DAKOTA

S. B. 13 provides a bureau for child and animal protection. S. B. 50 appropriates $6,000 for this purpose. S. B. 40 raises the age of consent to 18. S. B. 15 provides for a jury trial before commitment to an insane asylum. S. B. 61 provides that persons acquitted of criminal charges on the ground of insanity shall be confined until their sanity is proved. S. B. 34 establishes an optometry board. S. B. 39 amends the pure food law.

TEXAS

S. B. 17 provides for an optometry board. S. B. 77 regulates the sale of habit-forming drugs. Other bills provide for a state board of charities, sterilization of criminals, and an appropriation of $250,000 for the establishment of a negro insane asylum, and for the transfer of the state quarantine service to the federal government.

UTAH

H. B. 42 provides for the sterilization of criminals, insane, etc. S. B. 3 is a bill regulating marriage. S. B. 39, a pure food bill, has passed the Senate by a unanimous vote. S. B. 82 amends the medical practice act, defining the practice of medicine so as to exclude from the restrictions of the law all those who use any "spiritual, mechanical, electrical or wholly external means, without pretending to have a knowledge of the science of medicine." H. B. 42 creates a state board of eugenics. It was drafted and introduced by a woman physician who is a member of the lower house. S. B. 107 creates an optometry board.

VERMONT

A bill providing for the sterilization of criminals and defectives has passed both houses, and is in the governor's hands.

WASHINGTON

H. B. 218 amends the medical practice act. H. B. 152 creates a board of health examiners composed of "two osteopaths, two mechanotherapists, two suggestivetherapists, two chiropractors and one physicultopath." H. B. 131 amends the medical practice act by providing for a single board which shall issue three forms of certificates: a certificate for the practice of medicine, a certificate for the practice of osteopathy and a certificate authorizing the holder to practice any other system not covered by the two previous certificates. S. B. 38 provides for the sterilization of criminals and defectives. S. B. 3 authorizes counties to provide and maintain tuberculosis hospitals. H. B. 38 amends the medical practice act. H. B. 17 amends the state pharmacy law.

WISCONSIN

Bills have been introduced providing that the health commissioners in the various cities must be physicians, and that their appointment must be approved by the State Board of Health, providing for a board of optometry examiners, and providing for the treatment of tuberculosis patients on the State Forestry Reserve.

WYOMING

S. B. 26 amends the food and dairy law. S. B. 19 provides for a State Board of Health. S. B. 6 amends the pure food law. S. B. 25 provides for the inspection of all places where food products are manufactured, kept, or sold, and also regulates the production and sale of milk and bread.

A HANDFUL OF PAMPHLETS

Much of the information regarding present-day problems is to be found, not in the large volumes in the libraries or in the special articles in current periodical literature, but in the reports and pamphlets issued by various organizations and institutions. This is illustrated by a half dozen pamphlets, recently received at about the same time, and covering a wide range of subjects.

The first is the December *Bulletin* of the American Association for Labor Legislation. This contains a statement of the legislative program adopted by that organization, including the following items, on which it intends to concentrate its efforts until they are secured: one day of rest in seven; prevention of lead-poisoning; reporting of accidents and diseases; workmen's compensation; investigation of industrial hygiene; protection for working-women; enforcement of labor laws. The *Bulletin* contains a large amount of condensed information on these seven subjects with maps, charts and tables showing the exact condition of legislation thereon in each state.

The second pamphlet is Monograph 1 of the Children's Bureau which, quite appropriately, is devoted to birth registration, being a strong argument for adequate and uniform birth registration throughout the United States. In addition to a summary of the present condition of state legislation on this subject, the pamphlet contains the text of the model law, drafted by the committee of the American Medical Association and endorsed by practically all the national organizations interested in vital statistics.

Another pamphlet is the catalogue of the educational museum at Clark University, covering the department of school hygiene. This contains an introductory statement of the objects of the museum, and an outline of the plan on which it is organized, giving under each heading a summary of the material to be found in the museum.

The fourth book contains the proceedings of the sixth annual meeting of the Association of Life-Insurance Presidents. Besides discussion on such subjects as the financial management of insurance companies, agricultural credits, farm loans and railroad securities, the proceedings include a most interesting program on "prolonging the lives of policy holders," in which are discussed the importance of pure water, the prevention of typhoid, the value of vital statistics, and the report of the Committee on Health with a number of important recommendations.

Another pamphlet is a state board bulletin, the October-December *Bulletin* of the Michigan State Department of Health. This contains a preliminary report of a eugenic survey of Michigan, made by a special investigator and covering a year's work investigating the heredity, distribution and extent of feeble-mindedness in the state of Michigan. It is copiously illustrated with charts and photographs.

Another and a most interesting monograph is the report of the Special Committee on Methods of Sex Education, issued by the American Federation for Sex Hygiene. This report shows the results of the submission of thirteen propositions to a large number of teachers, physicians, college and university officials and sociologists. Both the personal opinions expressed in the replies and the conclusions summarized in the report will be of interest to those engaged in studying this important problem.

The last pamphlet in this lot was issued by the National Association for the Study and Prevention of Tuberculosis. It is by Prof. Irving Fisher, and is entitled "A Revised Estimate of the Economic Cost of Tuberculosis." In it Fisher endeavors to estimate the money loss caused by tuberculosis in the United States. Fisher concludes that there are each year 155,000 deaths from tuberculosis in the United States, and that the annual total cost of this disease is $570,000,000.

Pamphlets such as these are not generally listed in book-dealers' or publishers' catalogues, while the increasing number of organizations makes it difficult for those interested to keep track of the work being done by each individual organization. The value of such material is unquestioned, and the need of some kind of a clearing-house seems evident.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CONNECTICUT: Regular, City Hall, New Haven, March 11. Sec., Dr. Charles A. Tuttle, 196 York St.; Homeopathic, New Haven, March 11. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave.; Eclectic, New Haven, March 11. Sec., Dr. Thomas S. Hodge, 19 Main St., Torrington.

IOWA: Lincoln School Building, Des Moines, March 4-6. Sec., Dr. Guilford H. Sumner, State House.

MAINE: City Hall, Portland, March 11-12. Sec., Dr. Frank W. Searle, 776 Congress Street.

MASSACHUSETTS: State House, Boston, March 11-13. Sec., Dr. Edwin B. Harvey, Room 159, State House.

MISSOURI: St. Louis, February 24-26. Sec., Dr. Frank B. Hiller, State House, Jefferson City.

WYOMING: State House, Cheyenne, March 5-7. Sec., Dr. A. B. Tonkin, Riverton.

Rhode Island January Report

Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held at the State House, Providence, Jan. 2, 1913. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 80. The total number of candidates examined was 5, all of whom passed. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
Harvard Medical School	(1910)	90
Cornell University Medical College	(1909)	92.2
Syracuse University Medical College	(1911)	88.8
Jefferson Medical College	(1901)	86.7
Laval University, Montreal	(1905)	82.3

Maryland December Report

Dr. J. McPherson Scott, secretary of the Maryland Board of Medical Examiners, reports the written examination held at Baltimore, Dec. 10, 1912. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 66, of whom 44 passed and 22 failed. Nine candidates were licensed through reciprocity. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
Howard University, Washington, D. C.	(1911)	83
George Washington University	(1912)	83
Baltimore Medical College	(1911) 78; (1912)	81, 81
Johns Hopkins University	(1909)* (1911)	80
University of Maryland	(1911) 83, 84; (1912)	75, 77, 78, 79, 81, 83, 84.
College of Physicians and Surgeons, Baltimore	(1912)	75, 76, 78, 80, 80, 82, 84, 85.
Maryland Medical College	(1907) 78; (1910) 75; (1912)	76, 77, 79, 80, 81.
University and Bellevue Hospital Medical College	(1905)	85
Jefferson Medical College	(1912)	75, 82
Temple University	(1912)	76
Medico-Chirurgical College, Philadelphia	(1910) 79; (1911) 83; (1912)	80
University of Pennsylvania	(1912)	78, 83, 84, 88
University College of Medicine, Richmond	(1912)	75
University of Lausanne, Switzerland	(1904)*	

FAILED		
Howard University, Washington, D. C.	(1912)	67
George Washington University	(1911)	62
Georgetown University	(1911)†	
University of Maryland	(1911)	73
Baltimore Medical College	(1912)†	
College of Physicians and Surgeons, Baltimore	(1912)	67
Maryland Medical College	(1910)† (1911) 68; (1912)	54, 62, 72, 73; (1912, 4)†
Ohio Medical University	(1903)	60
Jefferson Medical College	(1902)	63
Woman's Medical College of Pennsylvania	(1910)†	
Medico-Chirurgical College, Philadelphia	(1912)	68, 70
Meharry Medical College	(1912)	55

LICENSED THROUGH RECIPROCITY		
College	Year Grad.	Reciprocity with
George Washington University	(1907)	Virginia
Maryland Medical College	(1903) (1911) (1912)	W. Virginia
University of Maryland	(1908) N. Carolina; (1911)	S. Carolina
College of Physicians and Surgeons, Baltimore	(1906)	Texas
Starling Medical College	(1898)	Ohio
Jefferson Medical College	(1904)	Delaware

* Licensed by special examination, Dec. 14, 1912.

† No grades given.

The following questions were asked:

ANATOMY

1. Describe upper extremity of the femur, including attachments of muscles. 2. Name (a) ligaments of elbow-joint and (b) bones entering into formation of radiocarpal joint. 3. Make drawing of outer surface of cerebral hemisphere showing position of lobes and chief fissures and convolutions. 4. After ligation of common carotid artery, how is collateral circulation established? 5. What anatomic structures pass through the sphenoid fissure (foramen lacerum anterius)? 6. Origin, course and distribution of facial nerve? 7. What structures are found between the layers of the broad ligament (ligamentum latum uteri)? 8. Describe the male urethra. 9. What glands are in the stomach? 10. Attachments, action and nerve-supply of the following muscles: rectus femoris, pronator quadratus, psoas magnus, triceps (extensor cubiti).

PHYSIOLOGY

1. State into what general classes foods are divided. Give example of each. 2. What is the function of each class of food in nutrition? 3. Name the secretions of the body and the functions of each. Name the excretions of the body. 4. What are the sources of animal heat? Mention some of the conditions affecting heat production. 5. Describe the functions of the spinal nerves. 6. What are the channels of absorption? Mention the facts and conditions that favor absorption and those that retard it. 7. Give the composition, reaction, uses and specific gravity of the blood, and the causes of the variation in specific gravity. 8. What do you understand by blood-pressure? State the cause of blood-pressure in the arteries, capillaries and veins. 9. Describe the function of the mucous membrane of the respiratory tract and the changes produced in the air and blood by respiration. 10. What is the physiologic function of the liver? State the origin, nature and destination of glycogen.

CHEMISTRY

1. Define: reagents, oxidation, precipitate, combustion and valence, and give an example of each. 2. (a) What is a base? (b) What is an acid? (c) What is a salt? (d) What is an alkaloid? (e) What is an alcohol? 3. Give one chemical test for the following when occurring in urine: (a) sugar, (b) bile, (c) albumin, (d) blood, (e) diacetic acid. 4. Give the chemical formula of each of the following: (a) hydrogen peroxid, (b) hydrocyanic acid, (c) calomel, (d) arsenious oxid, (e) benzene. 5. State the names and the general chemical and physical properties of the "halogens." 6. Complete the following equations: $Mg + H_2SO_4 = . . .$; $NH_3 + HCl = . . .$; $CO_2 + Ca(OH)_2 = . . .$; $Ba\,O_2 + H_2SO_4 = . . .$; $Cu\,O + 2\,HNO_3 =$. 7. (a) What are amalgams? (b) What are indicators? (c) What are alexins? (d) What are ptomains? (e) What is an atom? 8. Give the chemical formula, properties and uses of magnesium sulphate. 9. Under what circumstances are the syllables "mono," "di," "tri," "tetra" and "penta" used in chemical nomenclature? Give examples. 10. (a) Give a chemical antidote for mercuric chlorid. (b) Give two tests for organic matter in water. (c) What is ozone? (d) What is the average composition of cow's milk?

PATHOLOGY

1. Describe the changes occurring in cirrhosis of the liver. 2. Describe the mode of formation of tube-casts, and mention their significance. 3. *Oxyuris vermicularis:* Describe it and give its habits. 4. Mention the pathologic changes and associated conditions present in rachitis. 5. What changes are induced by chronic phosphorus poisoning? 6. Outline briefly the method which you would pursue in order to have the pathogenicity of a certain organism found in the blood of an animal in pure culture at autopsy. 7. Mention two or more pathologic conditions which would permit the spontaneous fracture of a long bone, and describe one of them. 8. Describe the changes occurring in an inflamed area which cause swelling and redness. 9. Mention the abdominal lesions present in the third week of an ordinary case of typhoid fever, and describe the conditions which precede a perforation. 10. What is the theory in regard to the action of the antitetanic vaccine? In what way does this differ in action from diphtheria antitoxin?

MATERIA MEDICA

1. Define tincture, fluidextract, decoction and infusion. What is the ordinary relative strength of a tincture to a fluidextract? 2. Opium: How obtained, official preparations and doses. 3. What is meant by "incompatibles"? Name some. What are the kinds of incompatibility? 4. Mercury: Name five official preparations and some of the incompatibles. 5. Name and describe six methods of introducing medicine into the system. 6. What is the difference between an expectorant and an emetic? Name three of each and the doses for a child 3 years old. 7. Name three circulatory stimulants, circulatory depressants, antispasmodics, emetics, carminatives and diuretics, and give doses of each. 8. What is the average adult dose of the following: tincture nux vomica, tincture veratrum, tincture aconite, morphin sulphate, tincture opium, Fowler's solution, nitroglycerin and cocain? 9. Chloral hydrate: Preparation and dose. 10. Potassium: Give six official preparations, doses and incompatibles.

THERAPEUTICS

1. Write a prescription in Latin, without abbreviation, containing three ingredients or more which you would use in acute pharyngitis, and give directions for administration. 2. Write a prescription in Latin, without abbreviation, which you would use in acute rheumatic arthritis, and give directions for administration. 3. What is a prescription? Name its constituent parts. 4. Define therapeutic, chemical and pharmaceutical incompatibility, and give an example of each. 5. Give the physiologic action and therapeutics of amyl nitrite. 6. Chloral hydrate: Its physiologic action and therapy. 7. Ergotum: Physiologic action and therapy in parturition. 8. Give the therapeutics of aconitum. 9. Write a prescription for an emulsion, and give indications for its use. 10. Give the dose of spartein per os, and state its therapy.

PRACTICE

1. Define: (a) Kernig's sign; (b) Ludwig's angina; (c) Koplik's sign; (d) pyelitis; (e) endocarditis. 2. Define: (a) cholelithiasis; (b) chorea major; (c) empyema; (d) pertussis; (e) Babinski's sign. 3. Differentiate: rubeola and scarlatina. 4. Name the symptoms of Graves' disease. 5. How would you diagnose a case of infantile paralysis? 6. Name the most important diseases occurring in the right inguinal region? 7. Name the types of chronic nephritis. Differentiate each type. 8. Give treatment of pharyngeal diphtheria. 9. Give treatment of influenza. 10. Give treatment of infantile paralysis.

SURGERY

1. What are the indications for enucleation of the eyeball? Describe an operation. 2. Symptomatology and treatment of acute catarrhal otitis media. 3. Differentiate between pernicious anemia and carcinoma of the stomach. 4. Give symptoms and treatment of coxalgia. 5. What technic and treatment would you employ for a punctured wound about the ankle caused by a pitchfork? 6. Give cause, symptoms, diagnosis, operative and postoperative treatment of rupture of the bladder. 7. Discuss the cardinal symptoms of brain tumor. 8. What is the significance of blood in the stools? 9. Give the symptoms and physical signs of carcinoma of the breast. 10. What are the causes and symptoms of intestinal obstruction?

OBSTETRICS

1. What should be learned at the first examination in a case of labor? 2. Name the occipital presentations. 3. What is placenta praevia, and how treated? What is dystocia? 4. What is version, and how many kinds of version are there? 5. How is the cord tied and dressed? 6. Describe the method of resuscitation when the child is apparently still-born. 7. What changes in the fetal circulation occur at birth? 8. Describe the deviations of the uterus from the normal position. 9. Give the etiology and treatment of erosion of the cervix. 10. Describe the operation cesarean section.

Medicolegal

What is Not an Illness, Consulting a Physician, or Confinement to House

(Poole vs. Grand Circle, Women of Woodcraft (Cal.), 123 Pac. R. 349)

The District Court of Appeal of California, Second District, holds that "illness," as used in an application for life insurance, must be construed as something more than a mere indisposition, due to a temporary cold, accompanied by a painful menstrual period. Nor should statements of the applicant that she had not consulted a physician or been confined to the house by illness since childhood be considered untrue because she had been visited once by a physician when she had such a temporary cold and was in bed. Illness relates to matters which have a sensible, appreciable form, and applies ordinarily to matters of a substantial character, and not to a slight and temporary indisposition, speedily forgotten. Remaining in the house for a few hours, or abstaining from the labors of one's usual calling, owing to a temporary cold or headache, cannot be construed as "confinement to the house by illness." A reasonable construction of the question about having consulted a physician implies that it should be interpreted as relating to a consultation as to some disease or illness with which the applicant was or had been afflicted, not to some feeling of trivial discomfort or temporary indisposition, not affecting the general health. The right of a beneficiary to recover on an insurance policy, the application for which contains a statement that the applicant has not consulted a physician since childhood, should not be defeated by evidence that years before the date of his application he consulted a physician as to a headache, due to an overlibation at a banquet, and was advised to visit a soda fountain and drink a bromo-seltzer.

Services Rendered Injured Employee for Which Surgeon is Entitled to Recover—Second Operation

(Hood vs. Gerrick and another (Wash.), 125 Pac. R. 956)

The Supreme Court of Washington affirms a judgment for the services of the plaintiff rendered subsequent to the time of a purported hiring by one of the defendants, and for the services of nurses subsequent to that time. The court says that an employee of the defendants, a foreman superintending the construction of a railroad bridge, met with a very serious accident. His right leg was crushed from the knee down, requiring immediate amputation. His left leg between the knee and the ankle, his right arm between the elbow and the shoulder, his right clavicle, and two of his ribs were broken. He also received an injury to the spine, severe contusions on various parts of the body, and a severe scalp wound. Neither of the defendants was present at the place at the time of the accident, and some person in no way connected with them called the defendant to attend the injured man. He responded to the call, rendered

medical and surgical aid, procured temporary hospital quarters, and engaged the services of a professional nurse. Some five days after the accident one of the defendants appeared at the place where the injured man was being cared for, and, according to the plaintiff, made an arrangement for his future care. The plaintiff testified that he explained the desperate nature of the man's injuries, the necessity of keeping a nurse with him at all hours of the day and night, the number of nurses that would be required for that purpose, and the cost of their services; that said defendant, knowing these facts, arranged with the plaintiff to continue the care and treatment of the injured man, employ such assistants as he found necessary, and promised that the defendant firm would pay the expenses thereof. The plaintiff continued his treatment until the man left the hospital, rendering bills to the defendants for his services, a small part only of which were paid. The defendants denied liability for any part of the services; but the trial judge, sitting without a jury, rendered a judgment for the plaintiff for the value of his services subsequent to the alleged hiring by the defendant mentioned, and for the services of the nurses subsequent to that time, though the plaintiff sued for the services of himself and the nurses he employed for the entire period of service. That was the judgment affirmed.

It was objected that a charge of $125, made for a second operation on the man's broken leg, was not within the terms of the contract proven; but the Supreme Court thinks that it was. The contract of hire was general; it was to furnish the injured man with such medical and surgical treatment as, in the judgment of the plaintiff, was necessary for his recovery; and if the plaintiff found it necessary to perform another operation on his leg, and the proofs showed it was so necessary, the plaintiff had the same right to perform and recover for that service that he had for any other medical or surgical service rendered the man.

Restricts to Attending Physicians Opinions on Insanity

(Commonwealth vs. Spencer (Mass.), 99 N. E. R. 266)

The Supreme Judicial Court of Massachusetts says that, whatever may be the practice elsewhere, it has long been settled in that state that, with the exception of the subscribing witnesses to a will, persons having no peculiar skill or professional experience can testify only to facts within their knowledge from which a condition of mind may be inferred, and are not permitted to state whether in their opinion, though derived from personal observation, a certain person was sane or insane at a particular time. As to attending or family physicians, the rule is somewhat relaxed. It is the duty of such a physician to make himself acquainted with the peculiarities, bodily and mental, of his patient, and he has the experience resulting from the performance of such duty. He therefore is permitted to testify from his own observation to the patient's mental capacity. But such a physician comes under the rule as to experts, and when he is offered as a witness it is the duty of the presiding justice to decide on his qualifications as such physician in the first instance. Nor should witnesses be permitted to testify as to how the actions of a defendant compared with those of the insane people whom they have seen.

Examination May Be Basis of Opinion as to Chastity But Not Veracity

(State vs. Acuspacker (La.), 58 So. R. 520)

The Supreme Court of Louisiana holds that a physical examination may serve as a basis for an expert opinion as to chastity, but not as to veracity. Consequently, in a prosecution for perjury alleged to have been committed in another case in which a man was charged with the crime against nature on a little girl, there was no error in refusing to allow the coroner, who had made a physical examination of the girl alleged to have been the pathic in that case, to answer the question: "In your opinion medically, and from your examination of the girl in question, is she what is known as a degenerate child or a perverted child?" her veracity only, and not her chastity, being in issue.

Book Notices

ANESTHETICS AND THEIR ADMINISTRATION. A Text-Book for Medical and Dental Practitioners and Students. By Sir Frederick W. Hewitt, M.V.O., M.A., M.D., Physician-Anesthetist to St. George's Hospital. Fourth Edition. Cloth. Price, 85 net. Pp. 676, with 71 Illustrations. New York: Macmillan Company, 1912.

Aside from the general revision to which this book has been subjected, two entirely new chapters have been added, one on local and regional anesthesia and the other on the medicolegal aspects of surgical anesthesia in general. The entire subject is presented admirably, and the discussion is comprehensive and to the point. Indications and contra-indications, methods of procedure and apparatus that may be employed are detailed clearly and concisely. Each chapter contains a mine of information, and questions are presented from all sides. It is impossible in a review to point out all the good features of this book, but the best one, perhaps, is the fact that the author refrains from making any positive statement which, although warranted by his extensive experience with anesthetics, might prove harmful if applied dogmatically by some less experienced anesthetizer. The anesthetist must be an experienced, well-trained person; this is made evident by a perusal of this book. Hewitt speaks more enthusiastically of the open-ether method, or perhalation system of etherization, as he calls it, than he did in the previous editions. Nitrous oxid, he says, is the safest anesthetic known, and when administered with a proper percentage of oxygen, in order to eliminate the asphyxial element, its inhalation is practically free from risk to life. Ethyl chlorid, he says, should be administered only by a thoroughly competent anesthetist, one who is fully conversant with all the principles of etherization. Nitrous oxid and ether are the choice of anesthetics for ordinary surgical practice, the former for short, the latter for longer operations. The C. E. mixture seems to be Hewitt's choice for a large number of cases in major surgery. The C. E.-ether sequence is mentioned often in preference to nitrous oxid-ether; but Hewitt always emphasizes the fact that experience and knowledge are the two essentials in making anesthesia safe. Chloroform, he says, is never safe, even in the hands of an expert. Ether is always reasonably safe and devoid of risk when given by an expert. The anesthetist, however, should always be an expert so that he will choose the proper anesthetic for each case and give it well.

A TEXT-BOOK ON THE PATHOGENIC BACTERIA AND PROTOZOA. For Students of Medicine and Physicians. By Joseph McFarland, M.D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College, Philadelphia. Seventh Edition. Cloth. Price, $3.50 net. Pp. 878, with 293 Illustrations. Philadelphia: W. B. Saunders Company, 1912.

The author has departed from his original intention to limit this work to a consideration of pathogenic bacteria, and includes now the protozoa of importance in human medicine. While this has increased the number of pages slightly, it has also added to the value of the book, which is in its seventh edition. The text has been completely revised, but one wonders why the subject of vaccine therapy and the preparation of vaccines does not receive greater attention. This subject surely is of sufficient importance to warrant the allotment of the space necessary to describe the preparation and use of the various vaccines employed in medicine. The reader receives meager information on the subject when naturally his desire to be informed is great. How can a vaccine be prepared, not only in the well-appointed laboratory but by any intelligent up-to-date practitioner of medicine? That, however, is a weak point not only in this book but in most text-books on bacteriology.

GOUVERNEUR HOSPITAL, NEW YORK. Report of the Tuberculosis Clinic from Its Establishment, 1903 to 1910. Paper. 1912.

This report represents an analysis of the 2,155 patients presenting themselves for treatment at the tuberculosis clinic of Gouverneur Hospital during a period of seven years, with the exception of four patients whose records are not available. Of these, 1,232 were diagnosed as positive tuberculous cases, 519 were dismissed after study as not being tuberculous, and in 403

no diagnosis could be attached to the record. The analysis of these cases is set forth in numerous tables covering almost every aspect of conditions influencing tuberculosis, including race, habits, earnings, housing, contact, etc., a close study of which should prove valuable to those directly engaged in dealing with tuberculosis as a sociologic problem. On the clinical side, taking into consideration the expense and the immense amount of time, labor and care involved, the results will be viewed with an amount of satisfaction in proportion, perhaps, to the degree of optimism and enthusiasm of the one who studies the figures. About 7 per cent. of the entire number of positive cases reached an "apparent cure" or an "arrest" and about 32 per cent. were "improved" or better. Excluding the 33 per cent. of patients who came to the clinic only one month or less, the percentages are considerably better in the first stage, show up fairly well in the second stage and not so well, of course, in the third stage, the figures depending, as might be expected, on the length of time the patients were under supervision.

DISEASES OF THE MOUTH. For Physicians, Dentists, Medical and Dental Students. By Prof. Dr. F. Zinsser, Director of the Department of Dermatology at the City Hospital, Lindenburg. Translated and Edited by John Bethune Stein, M.D., Professor of Physiology at the New York College of Dentistry. Cloth. Price, $7. Pp. 268, with 73 illustrations. New York: Rebman Company, 1912.

In this work the various clinical manifestations of syphilis in the mouth are described and illustrated. Teaching this subject has always been a difficult matter for the reason that clinical material is found not alone in dental clinics, but scattered about in clinics of laryngology, surgery, internal medicine and pediatrics, as well. The teacher as a result has had to fall back on oral descriptions in many cases, always an unsatisfactory expedient. Zinsser, by his large experience in the clinic and in practice, has been able to collect a varied assortment of manifestations of this disease, which he places at the disposal of the teacher and the student in a most satisfactory manner. The introduction is devoted to syphilis in general, its effects on the different tissues of the body, and its after-manifestations. Then primary, secondary and tertiary syphilis of the mouth are considered in turn, and finally diseases of the mouth similar to those of secondary and tertiary syphilis are differentiated. The illustrations are finely executed and are lifelike.

SURGERY AND DISEASES OF THE MOUTH AND JAWS. A Practical Treatise on the Surgery and Diseases of the Mouth and Allied Structures. By Vilray Papin Blair, A.M., M.D., Professor of Oral Surgery in the Washington University Dental School. Cloth. Price, $5. Pp. 638, with 384 illustrations. St. Louis: C. V. Mosby Company, 1912.

After considering anatomy, the author discusses inflammation, infections, tumors and cysts peculiar to the face and jaws. Hemorrhage and shock, both of which are difficult to handle when extensive operations on these structures are undertaken, make it necessary to dwell at length on the details of procedure. Wounds and injuries to the soft parts are analyzed in detail for the benefit of the student. Fractures of the jaws with the methods of modern surgery are described, and dislocations receive their share of attention. Deformities of the jaws and irregularities of the teeth are considered only in a general way. Some of the operations for the correction of the deformities of the jaw are rather visionary and have not been tested sufficiently to warrant their description and recommendation in a text-book.

LABORATORY METHODS, WITH SPECIAL REFERENCE TO THE NEEDS OF THE GENERAL PRACTITIONER. By B. G. R. Williams, M.D., and E. G. C. Williams, M.D., with an Introduction by Victor C. Vaughan, M.D., LL.D. Cloth. Price, $2. Pp. 204. St. Louis: C. V. Mosby Company, 1912.

This is a book for the general practitioner, who is "not usually prepared to make, on account of lack of extensive apparatus and other conveniences, elaborate chemical tests and examinations." The aim of the authors has been to simplify apparatus and technic to the end that the more essential tests may easily be applied. It is clearly pointed out that ordinary household articles or those purchasable at any hardware store serve quite as well as more expensive apparatus, so that an excellent working laboratory may be installed at low cost.

The subject-matter is divided into eighteen chapters, which cover a much wider range than is usual in such books. Practically every field is discussed which may come within the scope of the general work. The tests outlined are, necessarily, the more simple ones but are, nevertheless, adequate for routine work. The more extensive and unusual tests are left for the more fully equipped laboratory. The fallacies of the various methods are pointed out, while the proper interpretation of the results is clearly outlined and emphasized.

This book may be freely commended to those who may desire a working guide to the more usual laboratory methods. The style is clear and concise, and the general make-up of the book is excellent.

THE TREATMENT OF DISEASES OF THE SKIN. By W. Knowsley Sibley, M.A., M.D., B.C., Physician to St. John's Hospital for Diseases of the Skin, London. Cloth. Price, $1.40 net. Pp. 280, with illustrations. New York: Longmans, Green & Co., 1912.

One takes up a book like this with keen hopes. There is so much in the way of treatment that might be done better that one is always eager to see what original work a writer on therapeutics has to offer. This volume does not justify the eagerness. It is a small book on dermatology in which treatment is covered about as in any of the standard text-books. The first part, fifty-one pages, is devoted to a general statement of methods of treatment. Twenty-six pages are given to the therapeutic applications of hyperemia, which is the most interesting thing that the book has to offer; in the remaining twenty-five pages are considered—of course so inadequately as to be of almost no value to student or expert—*x*-rays, electrolysis, ionic medication, high-frequency currents, carbon dioxid snow, vaccines and diet. Diseases of the skin are considered alphabetically—acne, actinomycosis, ainhum, alopecia—a plan that avoids all the difficulties of classification, but surely does not help to a rational understanding of the natural associations of groups of skin diseases.

CONSUMPTION IN GENERAL PRACTICE. By H. Hyslop Thomson, M.D., D.P.H., Medical Superintendent, Liverpool Sanatorium. Cloth. Price, $4.50. Pp. 335. New York: Oxford University Press, 1912.

This is an excellent discussion of diagnosis, prognosis and treatment of the disease in the light of the newest developments. The first chapters devoted to diagnosis, while they contain nothing new, describe fully present methods of diagnosis and judicially weigh the value of each.

The second part of the book, devoted to prognosis, is especially good and unusually complete. Approximately eighty pages are devoted to this subject. As it deals with the question of greatest interest to every patient, too much space is not devoted to it. The author writes well, clearly and without repetition. The book will be found especially valuable to many readers because of these chapters on prognosis. The value and need of dispensary treatment is discussed and the need and advantage pointed out of farm colonies for many who are dismissed from sanatoriums apparently cured but who need outdoor employment and usually cannot find it.

THE BACTERIOLOGY OF SURFACE WATERS IN THE TROPICS. By William Wesley Clemesha, M.D., D.P.H., Sanitary Commissioner, Bengal. Cloth. Price, 7/8 rupees. Pp. 161. Calcutta: Thacker, Spink & Co., 1912.

To water bacteriologists this will prove an interesting treatise. The natural conditions in the tropics are so different from those in colder climates that important differences in the bacterial content of surface waters would be expected. The author has made the most thorough study of tropical conditions in this respect that has ever been undertaken. There are many details of technical interest, one of Major Clemesha's most important conclusions relating to the variation in resistance of different varieties of the *Bacillus coli* type under aquatic conditions. The non-dulcite fermenting forms, for example are classed by the author as not indicative of recent pollution. On the other hand, the typical *B. coli*, fermenting dextrose, lactose and dulcite but not saccharose, dies off so rapidly in water that its presence is thought to be a particularly good index of contamination. The book, as a whole, contains information of great value to the water analyst.

PRACTICAL ELECTROTHERAPEUTICS AND X-RAY THERAPY. With Chapters on Phototherapy, X-Ray in Eye Surgery, X-Ray in Dentistry, and Medicolegal Aspect of the X-Ray. By J. M. Martin, M.D., Professor of Electro-Therapeutics and X-Ray Methods in the Medical Department of Baylor University. Cloth. Price, $4. Pp. 446, with 219 illustrations. St. Louis: C. V. Mosby Company, 1912.

The author has undertaken to cover in a practical way the entire subject of electricity and *x*-rays as applied to medicine. It is a rather ambitious attempt, which he has carried out with satisfactory results. He knows well the theoretic side of his subjects, and evidently has a first-hand knowledge of the practice. He is somewhat optimistic—not rampantly so—but is evidently honest and anxious to make a fair statement. The book is well balanced, and can be recommended as a text-book on both electrotherapeutics and *x*-ray therapeutics.

NUTRITIONAL PHYSIOLOGY. By Percy Goldthwait Stiles, Assistant Professor of Physiology in Simmons College. Cloth. Price, $1.25 net. Pp. 271, with illustrations. Philadelphia: W. B. Saunders Company, 1912.

This is a small work viewing physiology from the point of view of the relation of living beings to the transformation of energy exhibited by the chemical and physical changes occurring in them. There is little of morphology, and the relations of the circulation and respiration are dealt with briefly. The nervous system is briefly described, but the organs of special sense are merely noticed. There are two excellent chapters on the hygiene of nutrition and a separate chapter on alcohol. The book is evidently intended as an elementary presentation of the general subject of nutrition, and this purpose defines its limitations. While primarily suitable to the general student of science, it will form pleasant reading for the leisure moments of the physician.

BLOOD-PRESSURE TECHNIC SIMPLIFIED. W. H. Cowing, M.D. Cloth. Price, $1 net. Pp. 119. Rochester, N. Y.: Taylor Instrument Company, 1912.

This book is put out by the Taylor Instrument Company, and naturally presents the advantages of the special instrument they sell. It is made up largely of quotations of papers which have been written on the various aspects of blood-pressure. The book is creditable to the author and publisher and, altogether, presents a fair account of the subject, which ought to be serviceable to the general practitioner.

Society Proceedings

NEW YORK ACADEMY OF MEDICINE

SECTION ON PEDIATRICS

Meeting held Dec. 12, 1912

DR. WILLIAM SHANNON in the Chair

Protein Milk As Corrective of Digestive Disturbances

DRS. HERBERT B. WILCOX and MINER C. HILL: Observers have differed widely in their methods of preparation of protein milk which has given widely divergent fat percentages and caloric values to the mixture. Our experience has to do with a protein milk made from skim-milk having a fat content of less than 1 per cent. The value of protein milk depends on its use as a corrective, and it is not to be considered as a fit means of prolonged nourishment, its period of usefulness being limited to the first seven or ten days of the dietetic treatment. In any acute digestive disturbances, low fats and sugars are certainly indicated, while higher percentages of proteins than were formerly believed advisable are now known to be well borne and actively beneficial. Protein milk seems to be better adapted to the early stages of such digestive disturbances than any other food preparation, but as the severity of the condition lessens the tolerance for and the need of more fat and carbohydrates increase, while the high protein is needed less as a neutralizer of fatty and carbohydrate fermentation. Its prolonged continuance brings about a needlessly heavy drain on the nitrogen metabolism.

There is no objection to the use of protein milk in combination with other foods. We have combined it with benefit with plain milk mixtures, breast-milk, and some solid foods. Our experience leads to the belief that the continuance of protein milk over many weeks is unnecessary and often injurious. Protein milk is best given without a preliminary course of treatment with tea or cereal decoctions. It is efficacious in all acute and chronic infections of the gastro-intestinal tract. It is equally suited to fermentative and putrefactive processes. It is better given in combination with other foods than alone, except for a short initial period. Children taking the protein milk can without danger be quickly swung over to plain milk mixtures.

From May, 1911, to November, 1912, 261 children were given protein milk for a variety of digestive disturbances. These children varied in age from prematurity to nine years. In many instances, before the protein milk diet was instituted, plain milk mixtures were tried for comparison. Clinically the cases treated were divided into three broad groups as follows: 1. Acute infections of the gastro-intestinal tract evidenced by vomiting, bad stools and fever. 2. Apparently non-infectious indigestions due to previous nutritional abuse. 3. Simple diarrheas, namely, those cases in which the infants could not be given food strong enough to increase body-weight without accompanying gastric or intestinal overactivity. In general, it may be said that protein milk is better suited to children over rather than under 3 months of age. The number of cures of children over 3 months of age was 20 per cent. greater than that of the very young. The improvement resulting from the use of protein milk in acute intestinal infections, as evidenced by fever and frequent bloody mucous stools, was more striking than in any other condition. In forty-four cases of severe intestinal infections of longer duration which we failed to correct by plain milk modifications, 70 per cent. were cured when changed to protein milk. With the initial use of protein milk in 198 intestinal cases, many of which were of a severe type, 73 per cent. of cures were effected.

Protein milk has also proved of value as a means of controlling vomiting. While there were very few patients having gastric symptoms unassociated with evidences of intestinal derangement, in seventy-four instances vomiting was the predominating symptom; of these thirty were put at once on plain milk modifications and 80 per cent. did well. The 20 per cent. failing to respond to this treatment promptly recovered when put on the protein milk. The remaining forty-four were put on protein milk at once, and good results were obtained in 82 per cent. of the cases. The indication for protein milk seemed equally clear whether the indigestion depended on fat or carbohydrate incapacity primarily, and it also seemed to be indicated whether the indigestion was due to bacterial fermentation or to putrefaction. Whether it was the fat or sugar that was at fault, an incapacity for both usually soon obtained. If fermentation predominated, the low fats and sugars tended to retard it, and the high protein, whether chemically or mechanically, seemed to be active in neutralizing this fermentation, in aiding the digestion of other food elements, and in restoring the balance of intestinal flora. If putrefaction existed, protein milk furnished enough sugar to inhibit the pure proteolytic activities of the bacteria by tuning the facultative organisms into fermentative activity. Protein milk is not a general panacea nor can it be considered the only means of controlling digestive abnormalities. It has been our experience, however, that those indigestions which do not respond to the usual means of treatment will respond much more readily to this method. Formerly every child entering the hospital with digestive disturbance was given an initial dose of castor oil; now only the very severe cases receive this drastic initiation. There is reason to believe that diarrheas due to the gas bacillus, the *Bacillus dysentericus* and other bacteria may as logically—and more easily—be corrected by protein milk as by purely bacterial starvation methods. The reason is found in the fact that these inhabitants of the intestinal tract are more or less facultative in their biochemical activities, and anything like a pure culture of any one group is a rare intestinal finding.

The buttermilk which we used was made from pasteurized milk containing 1.75 per cent. fat, to which was added 1 ounce of buttermilk per quart of the pasteurized milk. This was allowed to stand for twelve hours at a temperature of from 70 to 80 F., being thoroughly beaten at intervals of two or three hours and then placed on ice until needed. Each day the buttermilk was made from that of the preceding day, a smaller amount of stock being needed as time went on. The amount of stock used was determined by the degree of acidity required. To make the junket, 2 quarts of pasteurized milk and two junket tablets were used. After standing twenty minutes at a temperature of 100 F., the precipitated casein was strained through gauze, washed in water, and forced several times through a fine sieve with a potato masher. The sieving was facilitated by adding buttermilk to the curd, and was continued until the curd was thoroughly broken up into fine flakes. To 1 quart of buttermilk was added 1 quart of water and 1 grain of saccharin, and the whole added to the curd and beaten to form a suspension. In feeding there should be a large hole in the nipple, and the bottle should be shaken every two or three minutes.

As soon as the digestive condition showed some improvement, malt-sugar was added, the dextrin maltose being preferable as it could be added in greater quantities with less danger of gastric or intestinal irritability than the other forms of malt-sugar that had been used in these cases. The aim in treatment was to make the period in which the protein milk alone was used as short as possible. It was found that better results were obtained from the addition of malt and some plain milk than by providing all the calories needed with malt alone, and thus raising the carbohydrate percentage higher than was safe or desirable. The time necessary for the entire correction period averaged twelve days. The child was then turned over to the dispensary for further direction. The apparent effect of protein milk was such as to stimulate the absorption of other food so that gains were noted in many cases in which they were not looked for. It was not to be expected that young children would gain in weight when taking less than 30 calories per kilogram on the usual milk diets, yet many of their cases had done so. In no case was there noticed any untoward result from mixing protein milk and plain milk feedings. Protein milk was used with benefit in combination with cane-sugar, milk-sugar and malt-sugar, plain milk and breast-milk. In twelve infants suffering from severe nutritional disturbances, after breast-milk was resorted to without any improvement, protein milk alternating with the breast-feedings was tried, and the stabilizing effect of the protein milk was immediately apparent.

The Double Function of Fats and Carbohydrates in Nutrition and Their Nutritive Properties

DR. HENRY DWIGHT CHAPIN: Fats and carbohydrates are generally classified as foods whose function is merely to supply heat and energy, and it is customary to express their nutritive value in calories. In calculating human dietaries it has become the common practice to work out the number of calories of the different components of a feeding and by adding them together determine the nutritive value of the food, on the assumption that the nutritive value of the different food elements varies directly with the amount of heat they would yield when burned outside the body. Body heat, however, is a by-product. If the animal organism demanded food primarily for the heat it yields, such methods would be exceedingly useful and accurate, but food is not utilized in this manner. It has to be digested, assimilated, carried to the muscles, organs and tissues before it can be of value to the body or before it can be burned. It has never been shown that the animal organism uses heat derived from food, except to maintain the body temperature, and in the summer little or no food is required for this purpose; yet food is required under such conditions. An infant uses just as much milk in the tropics as elsewhere. The heat above that needed to maintain body temperature is excreted. It is evident that the fats and carbohydrates are not required primarily for the heat they yield, and that the heat excreted is not the measure of the food needed for growth. Body heat is produced by the expenditure of energy. When a human being is awake and sitting up or standing, more muscles are brought into activity and heat production increases proportionately, while during sleep there is a suspension of external activity, and the production of heat by the internal organs is at a minimum. When severe muscular exertion is made, heat production increases at a tremendous rate, being over nine times as great as during sleep. Heat production is not dependent on the size of the body or on its weight, but on the amount of activity of the body organs. The energy of the body is derived from the combination of oxygen of the air with the assimilated fat and carbohydrates and a part of the protein of the food. When energy is expended in the body it is changed into heat, and then becomes a waste product which must be excreted. The energy content of the food cannot be measured directly, as the expenditure of a definite amount of energy always liberates a definite quantity of heat; potential energy can be measured indirectly by the heat of combustion of the food.

The amount of heat produced during digestion and assimilation depends on the digestibility of the food, that is, the amount of energy needed to bring about its digestion. Available energy may be defined as the total energy minus that lost in the excreta and in the gases, and net energy as available energy minus the cost of digestion and of preparing the food for use. Hence physiologic food value and caloric value are not identical. It has often been observed in practice that certain foods in small quantities are more nutritious than larger quantities of other food having the same caloric value. The food needed for growth is not shown by the heat produced in the body. Each new cell contains fat and carbohydrate, and there must be more of these substances in the food than the heat excreted shows has been burned; therefore the heat excreted cannot be used as a standard for determining the quantity of fats and carbohydrates needed in the food when growth is taking place. Carbohydrates are primarily suppliers of energy and secondarily of heat. Babcock has recently shown that they have another function, which is to supply water to the cells in a manner that controls cell nutrition and growth. The digestion of carbohydrates consists in converting them into dextrose, the sugar of the blood, and this is brought about by the digestive enzymes adding two parts of water to cellulose, starch, glucose and dextrin, and one part of water to cane-sugar, maltose and milk-sugar. The assimilation of carbohydrates consists of converting into glycogen, which is insoluble, the portions not needed for immediate use, and the process consists of removing two parts of water from dextrose. The method of producing growth and nutrition in the cell consists essentially of dehydration and hydration.

As oxygen and hydrogen are present in carbohydrates in the proportions that neutralize each other and form water, the carbon is the only portion of the carbohydrate which can combine with the oxygen from the air and be available as an energy-producer. When fat is completely oxidized in the cell it is changed into carbon dioxid gas and water, the water produced weighing more than the original fat. There is a difference between fats and carbohydrates in the way in which this water is produced. In the carbohydrates it is merely split off from the carbon, while in the case of fats it is actually produced in the cells by the oxidation of the hydrogen of the fat. As producers of energy the fats and carbohydrates are interchangeable, but as water producers in the cell they have unlike properties.

Cell nutrition depends on metabolic water, that is, the water chemically produced from the food. If the cells are to obtain nourishment from the blood, the cell contents must be of less concentration than the blood or the soluble contents of the cell would flow to the blood and the cells would be starved. When dextrose or fat is oxidized in the cell the carbon is removed as a gas; the water split off from the carbon of the dextrose, or produced by oxidation of the hydrogen of the fat, is left behind to dilute the contents of the cell. The blood is now more concentrated than the cell fluids, and its nutriment flows toward the cell. As fats, when oxidized in the cell, dilute

the cell contents almost twice as much as the same quantity of carbohydrates, and thus stimulate a more rapid flow of nutriment to the cells, it is not difficult to see why cod-liver oil, butter and cream are so useful in tuberculosis as constructives. They are not needed for their energy, as patients needing these foods, instead of being abnormally active, are kept as quiet as possible.

Cow's milk contains 4 or 5 per cent. of carbohydrates; two-thirds of the caloric value lies in the fat and one-third in the carbohydrates. The fat will produce over 2 ounces of metabolic water to dilute the cell fluids, and the sugar about 1½ ounces of metabolic water to 50 ounces of milk.

The chick in the egg is not expending bodily energy, and its body heat is maintained by the hen or the incubator so that it needs little food to meet its energy and heat demands, and yet the hen's egg contains nearly 23 per cent. fat but no carbohydrates, and the fat contains less carbon than other fats. When it is remembered that growth consists of enlargement and division of the cells, which calls for rapid assimilation of nutriment, it will be seen that a substance with great capacity for producing metabolic water and thus causing a rapid flow of nutriment to the cells is just what is needed in milk and eggs. It is supplied as fat.

Metabolic water is all that some animals require. The imbibed water of other animals is needed mostly as a vehicle to carry off waste products by changing them into latent heat when the amount of heat produced is too great to be carried off by radiation, and for removing protein waste when in a soluble form as urea. Metabolic water would probably be sufficient for all animal needs were it not for the elimination of poisonous substances resulting from protein degeneration.

It is quite evident that an overemphasis has been placed on the caloric value of foods, particularly as far as the nutrition of infants and growing children is concerned. Infants need little food for energy except as this is expended in digestion and assimilation of foods. Their natural food is highly specialized in composition and in digestive properties, and is peculiarly suited to their needs. Milks of various animals vary in composition and digestive properties directly with the variation in type of the animal. A proper estimation of foods, in a last analysis, depends on digestive suitability and capacity to produce true growth and proper development.

DISCUSSION

DR. B. RAYMOND HOOBLER: From the figures submitted it is shown that in cases of several children fed on protein milk the nitrogen intake was considerably higher than usually is fed to children of the same age. Though the intake was higher the absorption was excellent, 95 per cent. being absorbed, which is the same as in a normal child. The retention of nitrogen gradually increased from day to day until supposedly the nitrogen need of the infant was fully met. Then the retention remained at a level, being sufficient to meet the protein need for growth. The results obtained by me in the feeding of large quantities of protein, as gathered from experiments made under the supervision of Dr. Holt and published in the *American Journal of Diseases of Children*, November, 1912, had a distinct bearing on the various factors which cause the stools to change from the frequent, green watery stools of the diarrheal type at the beginning of the protein milk feeding to the smooth, pasty, yellow stools which appear after from four to six days' feeding of protein milk. There is a marked lowering of the acidity of the stools and a marked reduction in the free fatty acids present in the stools. The amount of fat in the form of soluble or insoluble soaps is much increased. The amount of water lost from the body through the stools is greatly reduced, and the retention of mineral salts greatly increased.

PROF. GRAHAM LUSK: The same factors relative to maintenance, repair and growth that appear in the adult are present in the infant. The baby at the breast takes food containing calories sufficient for its maintenance and about 15 per cent. more; the latter is added to the body for growth. The child's own instinct leads him to take nourishment sufficient to accomplish this result. This instinct belongs to the race. In the extended experiments of the Remsen Board it is astonishing to find how the quantity of bread taken by each individual daily was practically constant, usually not varying more than 20 gm. for the individual. Here, as in infancy, instinct furnishes the guide for nutrition. If the baby is not nourished in the natural fashion it is a matter of luck whether he receives sufficient nourishment to cause him to grow properly. Protein is made up of a great many structural units called amino-acids. These amino-acids are as many in number as the letters of the alphabet, and their possible arrangement as manifold as the words of the dictionary. The protein is broken up in the intestinal tract into these several amino-acids and enters the blood in the form of amino-acids. These served to build up the varying portions of the machinery of the cells. Even in babyhood there is wear and tear on the protein constituents of the cells, as is manifested by the waste of nitrogen in the urine of the infant when protein starvation occurs. It is therefore necessary to administer sufficient protein to repair this wear-and-tear quota which has been destroyed, and in addition to give enough to furnish new protein building-stones for the constructive growth which is inherent in the protoplasm of the young of all species. As to the carbohydrates, there is no question but that carbohydrate may supplant fat in the nutrition of children if that be deemed necessary. Fat, on the contrary, cannot supplant carbohydrate entirely because, under circumstances of exclusive fat-protein dietary, acidosis appears.

It is necessary to consider the caloric requirement of the infant when a proper dietary is to be devised, and this should contain during the first three months 90 calories per kilogram of body weight. In experiments which Dr. John Howland made in our laboratory it has been seen that an infant may eliminate 15 calories hour after hour, after taking a usual milk mixture. Food itself in ordinary quantities may increase metabolism somewhat. The addition of protein so that the protein content of the milk is doubled causes an increase in the heat production of the child from 15 calories per hour to 19 calories per hour. This increase of heat production is due to the specific dynamic action of protein. I have recently shown that this is due to the stimulation of the protoplasm through the action of certain amino-acids.

It has been stated that the heat value of foods is largely lost through work expended on the digestion of the food. One should remember, however, that the breaking down of protein into amino-acids or of fat into fatty acid and glycerin in the intestine, is not accompanied by the evolution of heat. Furthermore, if agar-agar be given there is no increase in metabolism, notwithstanding a great activity on the part of the intestinal tract. Cathartics which strongly stimulate the intestinal tract have no effect at all on the heat production of the organism, as Benedict has shown.

DR. H. D. CHAPIN: As an instance showing the importance of metabolic water, I have estimated that if a man of 70 kg. net weight should produce a hundred calories of heat per hour, and those hundred calories of heat were derived exclusively from carbohydrate, then in the oxidation of this carbohydrate, 0.24 gm. of water would be produced each minute. That would mean the production of 3 mg. of water per kilogram of body-weight, or three parts of water per million parts of body-weight. Since the volume of blood circulates at least once per minute, bearing perhaps food brought from the intestines, it hardly seems possible that metabolic water amounting to 3 mg. per kilogram can in any way be influential in the exchange of food between the blood and the tissues. It seems as though the osmotic pressure of the foodstuffs within the blood would be the determining factor in their passage from the blood-stream to the cell.

DR. SAMUEL S. ADAMS, Washington, D. C.: I have had a wide experience with these cases. At the Children's Hospital in Washington we have tried various treatments for gastro-enteric diseases, and have come to the conclusion that the severe heat and intense humidity influence the varying mortality among infants. The Finkelstein method was followed, but the results were not such as to lead us to continue it long. There was great difficulty in inducing the babies to take the food. The records showed that children with badly deranged

digestion, taking from 18 to 24 ounces of milk mixtures, when given the protein milk took only 4, 5 or 8 ounces in twenty-four hours. The mortality was very high and the treatment had to be abandoned. The cases were not selected. I believe that we are soon going to obtain better results with these cases, but we are about as far from solving the problem of infant-feeding to-day as we were years ago.

DR. JOHN LOVETT MORSE, Boston: It is not clear to me why the same kind of food should affect one sort of bacteria in one way and another sort in another way; that is, why it should antagonize fermentation in one case and putrefaction in another. In these cases of dysentery caused by the gas bacillus or allied organisms, it should do good; but it ought to be harmful in those caused by the dysentery bacilli which produce toxic substances from proteins.

DR. L. E. LAFETRA: I have used the protein milk for three seasons. The result of this experience in severe dysentery with mucus and blood in the stools, whether the result of fermentative changes or not, led me to believe that protein milk is the best means of dietetic treatment with which I am acquainted. One is often struck with the rapid improvement that follows its use. In nine out of ten cases of infants with high fever, improvement will be very striking after the administration of protein milk for three days. The living Bulgarian lactic acid bacilli must have part of the credit for the improvement in the true dysenteric and putrefactive cases. Protein milk increases the tolerance for other foods; this is a point that should be emphasized. At Bellevue Hospital, in several instances in which even breast milk could not be taken without diarrhea, the substitution of low-fat protein milk for two or three nursings daily arrested the diarrhea, and the breast feeding could be resumed later. The protein milk may be given with advantage in combination with other foods. I agree with Dr. Wilcox that the preparation of the protein milk for therapeutic purposes should be made from skimmed milk.

DR. GODFREY R. PISEK: Finkelstein's feeding should be regarded only as a therapeutic measure. Using it three or four days, one could then return to the breast or other feeding and obtain good results in a large number of cases. What Dr. Wilcox says compares well with the experience of those who have used the protein milk for a number of years. A very important step is switching to skimmed milk after the bowel condition has improved.

Referring to what Dr. Chapin says about metabolic water, if we cannot put this to practical application at once it does not lessen its value in infant-feeding. Use for this knowledge may be found that will change our present ideas. We can compare this action in the cells to that of a float feed in the carbureter, allowing the tissues to take up or to repulse this metabolic water according to their needs.

DR. ROWLAND G. FREEMAN: Finkelstein's milk has a limited application. It possesses the advantage of containing lactic acid bacilli in a form more palatable than buttermilk, while its disadvantages are that it contains too much fat for many cases of diarrhea, less sugar than most children can digest, and that it discards the lactalbumin of the whey, which is the most easily digested protein, especially for children under 3 months of age, for whom this milk has been recommended. Modification of the original receipt by using skimmed milk or adding sugar will eliminate some of these objections. It is particularly valuable in cases of offensive stools, but often better results may be obtained by feeding lactic acid bacilli in another form and then using a modification particularly adapted to the case. The estimation of caloric values is most important as a guide against underfeeding.

DR. CHARLES G. KERLEY: In my experience protein milk has proved a useful addition to the diet of children with diarrhea. It can be digested before skimmed milk will be tolerated, and is of use in supplying substantial nourishment when it is much needed. It is my conviction that sugar and milk-fat are accountable for not a few of the disorders of older children, conditions brought about by defective oxidation of carbohydrates and fats. These disorders have a peculiar tendency to become cyclic and are represented in cyclic vomiting, recurrent bronchitis, eczema and periodic so-called bilious attacks.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

February, V, No. 2, pp. 89-204

1 *Surgery of Thymus Gland: Thymectomy; Report of Fifty Operated Cases. C. A. Parker, Chicago.
2 Angioma of Larynx, Especially Its Relation to Chronic Laryngitis. J. Phillips and H. O. Ruh, Cleveland.
3 Osteogenesis Imperfecta; Report of Case. H. Schwarz and M. H. Bass, New York.
4 Congenital Atresia of Esophagus; Report of Three Cases. J. Brennemann, Chicago.
5 Reduction of Infant Mortality in New York. S. J. Baker, New York.

1. **Surgery of Thymus Gland.**—Attention is directed by Parker to the fact that many sudden deaths in infants have been caused by an enlarged thymus-producing obstruction of the trachea. Frequently this is the sole factor responsible for the compression, but at times enlarged tracheobronchial glands or spasm of the glottis are contributing factors in producing the fatal result. Compression of the trachea is shown at autopsy by the presence of a flattened trachea associated with the enlarged thymus, and is revealed *intra vitam* by the bronchoscope, showing the narrowed lumen of the organ, the symptoms referable to which being completely relieved by thymectomy. The diminished caliber has also been demonstrated by intubation, only a long tube sufficing to keep the trachea open and immediate and permanent relief following removal of the gland.

Two general types of cases are observed, the continuous type in which the symptoms usually date from birth or soon after with permanent dyspnea usually present, and the intermittent type, usually of later development, in which there are longer or shorter intervals free from symptoms. The three most important symptoms in either type are permanent dyspnea, recurring suffocative attacks and stridor. All three of these frequently occur together, when their presence is an imperative indication for immediate operation. The presence of either one of the first two symptoms is an equally imperative indication for operation. Stridor alone is not an indication for thymectomy.

The treatment is essentially surgical. Operative treatment—thymectomy—is as necessary and effective in tracheal obstruction from the thymus enlargement as tracheotomy or intubation are for obstruction higher up. It is frequently an emergency operation. Although the accumulating evidence is strongly suggestive that the thymus gland is absolutely necessary to life and normal development in the earlier stages of growth, its operative removal in the young human subject, as far as present evidence has shown, is not fraught with the slightest untoward metabolic disturbances. This is probably due to the fact that it is never completely removed and that the remaining portion quickly reproduces the tissues of the organ. It may also be in man, as in the lower animals, that after a certain period of growth its function is taken up by other organs, as the thyroid and spleen, and its complete removal, if it were possible, would have no baleful influence on the organism. Of seventeen recorded deaths in literature that occurred in thymectomized children, four followed a complicating tracheotomy and one an unclosed wound with drainage and infection. Four were due to infection from septic tracheobronchial glands. In one there was a preliminary bronchoscopy and in another there had been several unsuccessful attempts at tubage immediately preceding the operation. In three cases with incomplete histories the operator expressly stated that the deaths were not due to the operation itself. One was in a severe case of Little's disease. And, finally in two cases the deaths occurred several weeks after operation from causes remote from if not entirely separate from the operative procedure. In no case was the operation immediately fatal. Intracapsular thymectomy is the only type of operation now employed. The vertical median incision terminating about 1 cm. below the upper border of the sternum is the skin incision usually employed. This is the one used in Veau's operation. The low transverse incision has been successfully

employed in a few cases. General anesthesia is usually well borne when competently given. The operation is easily and safely performed.

American Journal of Insanity, Baltimore

January, LXIX, No. 3, pp. 369-642

6 Three-Quarters of a Century of Institutional Care of the Insane in United States. H. M. Hurd, Baltimore.
7 *Occupation for Insane. C. F. Haviland, Kings Park, N. Y.
8 Relation of Certain Psychoses to Neuroses. C. L. Carlisle, Kings Park, N. Y.
9 *Some Psychologic Observations in Insane. M. E. Witte, Clarinda, Iowa.
10 Legitimate Use of Psychic Influences in Treatment of Sick. H. C. Eyman, Massillon, Ohio.
11 Rôle of Nervous System as Affecting Symptomatology of Disease and Influence of Disturbance in Its Functions on Morbidity. H. A. Tomlinson, St. Peter, Minn.
12 *Nature of Metastatic Tumors of Thyroid. A. Meyer, Baltimore.
13 Case of Pellagra in Maine; Recent Work on Etiology of Disease. H. W. Miller, Augusta, Me.
14 Analysis of Psychosexual Anesthesia in Case of Psychopathic Personality. M. J. Karpas, New York.
15 Jury Law for Commitment of Insane in Illinois (1867-1893); Also Later Developments in Lunacy Legislation. R. Dewey, Wauwatosa, Wis.
16 *Heredity in Epilepsy. E. Flood and M. Collins, Palmar, Mass.
17 Forms of Mental Disease in Cases Showing No Gross Lesions in Brain at Autopsy. C. G. McGaffin, Taunton, Mass.
18 Treatment of Insane in British Columbia. C. E. Doherty, New Westminster, B. C.
19 Insanity Among Indians. H. R. Hummer, Canton, S. Dak.
20 *Ocular Symptoms in General Paralysis of Insane. H. T. Child, Kankakee, Ill.

7. **Occupation for Insane.**—Haviland summarizes his article as follows: The therapeutic value of occupation of the insane is axiomatic and is based on sound psychologic laws. Former haphazard occupations should be replaced by graded, systematized plans of work under a coordinating head. Occupational reeducation, as emphasized in special classes, should likewise be a feature of ordinary routine hospital work. The supervision of occupational reeducation is distinctly medical work. The form of occupation should be adapted to patients' capacity, should not be monotonous, and, so far as possible, should be creative. Successful reeducation means primary interest, and to induce this, methods must be flexible and vary with the individual. Recreation should accompany occupation, the latter never being regarded as an end in itself. Success of work depends more on character of instructors than character of patients. Despite necessity of trained specialists for occupational instruction, with inculcation of proper spirit, it is possible to develop most of them from the regular force of a hospital. Special occupational classes require no expensive equipment and can be made practically self-supporting. While New York state hospitals are doing more than ever before in occupational training, it is possible to still further extend the work by using attendants as assistants to regular instructors and introducing occupational training as ward work. While many cases are incurable, despite any form of treatment, the industrious are thereby less burdensome and lead happier lives. Occupation for insane patients has great economic value, but this must ever remain subsidiary to therapeutic aspect.

9. **Psychologic Observations in Insane.**—There is no doubt in Witte's mind that the organic sensations, arising mostly in and conveyed in part at least by the symptomatic, play a fundamental rôle in the production of feelings, as well as in the construction of personality. Constantly day and night messages of good, bad, or indifferent import are sent to the brain, and these produce changes in the lower basal ganglia, as well as cortical neurones. Ordinarily and in health, the result of this continuous bombardment remains below the threshold of consciousness, but it influences, nevertheless, our moods and fluctuating feelings, which are based thereon. The subconscious regions of our mind also extend down into and involve the great seats of organic life—ultimately the difference between the optimist and the pessimist, a Leibnitz or a Schopenhauer, for instance, is one of supra and subdiaphragmatic adequacy, or perhaps of efficiency of the sympathetic. Feeling is a primary and fundamental ability of the mind. The ability to realize pleasure and pain and to react accordingly, has been the one guiding and protecting principle of life.

12. **Nature of Metastatic Tumors of Thyroid.**—The summary of the case cited by Meyer is as follows: In a woman with a moderate left-sided struma of the thyroid, there developed a tumor of the skull, a tumor of the femur causing infraction and an invasion of the bronchial and inguinal glands. The tumor of the thyroid also increased during the last year of her life, but it was not infiltrating as is characteristic for the struma maligna; it respected the covering membranes of the thyroid; the lymph-nodes, too, were not adherent; the tumor of the skull was limited between the endothelium of the dura and the periosteum of the skull, but it pervaded the dura and bone and produced uneven hyperostoses on the inside and long fish-bone-like processes from the outside of the skull into the elevated periosteum. The tumor of the femur was distinctly infiltrating, as it penetrated through the bone between the muscle bundles. In its nature, the thyroid itself suggested a condition of adenomatosis in the apparently normal part, and adenocarcinosis in the tumor of the middle and left lobe with central fibrosis and partial calcification. The tumor of the skull showed to a great extent normal thyroid structure and only within the dura atypical arrangement of the cell elements. The tumor of the femur and the metastasis in the bronchial gland have the type of adenocarcinoma, beside normal thyroid structure with typical vesicles and colloid. In short, certain parts of the metastatic tumors, especially that of the skull, showed more typical thyroid structure than even the normal right lobe of the thyroid.

16. **Heredity in Epilepsy.**—The material for this study is taken by Flood and Collins from the pedigrees of seventy-eight of the patients at the Monson State Hospital. In connection with these, there are some pedigrees of allied families, making ninety pedigrees on file. A few of the pedigrees are somewhat incomplete, but a large number of them have been extended so far that a single one may furnish sufficient data for the study of the family history of from two to five cases of epilepsy. The results of the study, so far, are summed up as follows:

1. We have no conclusive evidence that alcoholism in the parents is a cause of epilepsy in the children, although alcoholism is often associated with epilepsy. It may be regarded as a concomitant of epilepsy and an additional evidence of nervous weakness. 2. Feeble-mindedness is also associated with epilepsy, and there is some evidence that it is caused by the same defect that caused the epilepsy. 3. Fitting the material to the two hypotheses, first that epilepsy is a recessive trait that is inherited only as epilepsy, and second, that epilepsy, feeble-mindedness and insanity are due to the same defect which may appear in the form of any one of them, there is no striking evidence in favor of one to the exclusion of the other. The truth probably lies somewhere between the two. 4. While we are not in a position to say at present whether every case of epilepsy is inherited or to say in what proportion of cases it is inherited, we can say that in a large proportion of cases there is some nervous defect on both sides of the family. These defects may be epilepsy, feeble-mindedness, insanity, extreme nervousness, migrain, alcoholism, sexual immorality and lack of moral sense.

The ultimate purpose of the study of the inheritance of epilepsy is to learn what are the expectations in regard to the condition of offspring in epileptic families.

20. **Ocular Symptoms in General Paralysis.**—Certain pupillary changes were found by Child in general paralysis which, he says, can be determined by careful observation. Among those most prominent are fixed, dilated pupils, irregular pupils and the variation in time pursuit and velocity reaction. That certain anatomic changes are also present has an important bearing.

Arkansas Medical Society Journal, Little Rock

January, IX, No. 8, pp. 181-204

21 Rôle of Appendix in Indigestion. J. P. Runyan, Little Rock.
22 Public Health. W. A. Evans, Chicago.

Boston Medical and Surgical Journal

January 30, CLXVIII, No. 5, pp. 149-182

23 *Seventy-Six Operations in Which Lane Bone-Plates Were Used. W. Bartlett, St. Louis.
24 *Unilateral Hematuria in Chronic Nephritis. P. E. Truesdale, Fall River, Mass.
25 *Speech Disorder: Neglect Lisping: Case and Treatment. W. B. Swift, Boston.
26 Clinical Studies on Feeding in Infantile Malnutrition. C. H. Dunn, Boston.
27 Intraventricular Hemorrhage of New-Born. A. C. Eastman, Springfield, Mass.
28 Toxicity of Bile, with Report of Unusual Case. W. E. Ladd, Boston.

23. **Operations in Which Lane Bone Plates Were Used.**—In the seventy-six patients in which Bartlett used the Lane

bone plate, the following bones were broken: clavicle, 7; humerus, 17; radius, 1; radius and ulna, 3; ulna, 4; femur, 17; tibia, 15; tibia and fibula, 9; fibula alone, 3. He has traced half of these patients for periods ranging from two to twenty-nine months after operation. The other thirty-eight are known to have left the hospital alive and most of them in better shape than when they entered. Many walked out in full health, without dressing, splint or crutch, but some were removed in the original cast and dressing at the end of one or more weeks.

Among the thirty-eight which have been traced, there were twenty-two simple and sixteen compound fractures. Of the latter, twelve were fresh or granulating when the plate was introduced, while four were suppurating at the time of operation. Of these thirty-eight patients, thirteen are known to have had their plates removed. Four plates had to be taken out in simple fractures and nine in compound. Seven of these thirty-eight results are considered failures by Bartlett. The results of Bartlett's clinical and laboratory work incline him to the belief that extreme discrimination will be the rule in choosing future subjects for open fracture operations.

24. **Unilateral Hematuria in Chronic Nephritis.**—Truesdale's investigations seem to indicate that hematuria as an early sign of unilateral chronic nephritis is more common than is generally supposed, and the removal of the kidney under these circumstances affords an opportunity for the study of this disease in the period of its earliest manifestation.

25. **Speech Disorder.**—Swift cites the case of a girl of 8, who after a severe meningitis and diagnosis of feeble-mindedness, was operated on for adenoids and tonsils, and given exercises to improve her speech defect—known as neglect lisping—by a method of enforced mechanical attention and in a few weeks could say a poem distinctly.

Bulletin of Manila Medical Society

November, IV, No. 11, pp. 179-192

29 Laboratory Notes on Bacillus of Dysentery. C. A. Butler, U. S. Navy.

Indiana State Medical Association Journal, Fort Wayne

January, VI, No. 1, pp. 1-54

30 Year's Progress in Medicine. C. P. Emerson, Indianapolis.
31 Year's Progress in Surgery. B. Van Sweringen, Fort Wayne.
32 Year's Progress in Pathology and Bacteriology. B. W. Rhamy, Fort Wayne.
33 Year's Progress in Oto-Laryngology. J. F. Barnhill, Indianapolis.
34 Year's Progress in Ophthalmology. W. F. Hughes, Indianapolis.
35 Year's Work of Indiana State Board of Health. W. F. King, Indianapolis.
36 Our Association's Activities. A. C. Kimberlin, Indianapolis.

Journal of Nervous and Mental Disease, Lancaster, Pa.

January, XL, No. 1, pp. 1-71

37 Retardation and Constitutional Inferiority in Connection with Education and Crime. J. J. Thomas, Boston.
38 *Localized Encephalitis of Left Motor Cortical Region with Epilepsia Continua. S. Krumbholz, Chicago.

38. **Encephalitis with Epilepsia Continua.**—With the exception of one general epileptic seizure, Krumholz' patient presented clonic convulsions of separate muscle groups which continued with equal frequency for twenty days until fatal termination. The patient was a 14-year-old girl, apparently of normal constitution, except for a slight suggestion of infantilism. After a few days of uncertain prodromals, she became ill with epilepsia continua, without any known cause. This singular symptom stood out preeminently throughout the disease and persisted until fatal termination. As a whole, fever played no rôle in the disease, the patient having presented only at rare times a slight elevation of temperature. The fever, which occurred toward the end, Krumholz does not consider characteristic of the disease, as its course did not differ from fever in fatal cases of status epilepticus. With the exception of taches cerebrales; symptoms of meningeal irritation were absent. The cerebrospinal fluid having proved negative, the diagnosis of meningitis or meningo-encephalitis was excluded.

The presence of a tumor in the lower third of the motor cortical region, or pseudotumor cerebrae (Nonne), was excluded on account of the absence of pressure symptoms, negative ophthalmoscopic finding, etc., which also, to a great extent, ruled against cerebral tubercle; besides, this patient presented no symptoms of tuberculosis, such as glandular enlargements, caseous cicatrices, ocular fundus changes, pulmonary involvement, etc. Likewise there were no symptoms to support the diagnosis of cerebral syphilis or metasyphilis, Wassermann reaction in serum and in spinal fluid being negative. Finally, an irregular form of idiopathic epilepsy had to be excluded, because the general picture of the disease did not conform with such diagnosis, especially since the tendency of the convulsions to become generalized was extremely slight. The patient developed only one general epileptic seizure, otherwise retaining strictly the jacksonian type of convulsions for days and weeks.

There was, to a certain degree, a tendency to gradual generalization of the convulsions, but this tendency is unusually slow. This slowness, this sameness of rhythm and stability of frequency, Krumholz says, distinguishes this case from the convulsions of idiopathic epilepsy and places it in that category of epilepsia continua which occurs in Lissauer's paralysis; in encephalitis hemorrhagica; in some cases of cerebral syphilis; in rare cases of cysticereus and in isolated cases of pachymeningitis hemorrhagica. Therefore Krumholz believes that it was a case of circumscribed, acute, non-suppurative encephalitis affecting chiefly the lower third of the motor region of the left hemisphere, beginning at the operculum Rolandi and extending up to about the foot of the second frontal convolution. The conclusion as to the character of the encephalitic process was substantiated by autopsy.

Summarizing, Krumholz points out that although the history of the case reveals no etiologic factor for the disease, the pathologic anatomy bears the finger-marks of a toxic agent. The acute cerebral changes are characteristic of encephalitis hemorrhagica. The vehement gliomatous proliferation of the left motor cortical region renders the lesion singular in character. It is probable that this vehement sclerotic process in the motor cortical region is an essential factor in the production of the convulsions. The character of the clonisms, their gradual extension to the adjacent cortical centers and the slowness of their tendency toward generalization made the character of the pathologic process comprehensive. The presence of the frontal type of the head and conjugate eye-movements assisted considerably in the localization of the lesion and the direction of its route.

Lancet-Clinic, Cincinnati

January 25, CIX, No. 4, pp. 87-112

39 Biologic Interpretation and Surgical Aspects in Painful Indigestion. G. W. Crile, Cleveland.
40 Stomach from Standpoint of General Practitioner, the Specialists and Surgeon. C. G. Stockton, Buffalo.
41 Cannula-Forceps for Blood-Vessel Anastomosis. J. W. Price, Louisville, Ky.

Michigan State Medical Society Journal, Battle Creek

January, XII, No. 1, pp. 1-66

42 Michigan Medical Law. L. W. Smith, Ionia.
43 Narrow Nose. R. E. Mercer, Detroit.
44 Treatment of Acute Appendicitis. C. D. Brooks, Detroit.
45 Pneumonia. W. L. Griffin, Shelby.
46 Conduct of Normal Labor. C. E. Boys, Kalamazoo.
47 Salvarsan; Its Use to Oculist and Laryngologist. R. C. Fraser, Port Huron.

New Orleans Medical and Surgical Journal

January, LXV, No. 7, pp. 489-558

48 Elements of Dermatology. I. Dyer, New Orleans.
49 *Paratyphoid Cholecystitis, with Report of Case. J. B. Guthrie, New Orleans.
50 Dietetics, Simplified for General Practitioner. F. E. Lamothe, New Orleans.
51 *Recurrent Vomiting. J. A. Storck, New Orleans.
52 Influenza: Gastro-Intestinal. L. J. Menville, Houma, La.
53 Advancement of Obstetrics; Its Relation to Gynecology. E. D. Martin, New Orleans.

49 and 51. Abstracted in THE JOURNAL, May 18, 1912, pp. 1538 and 1539.

New York Medical Journal

February 1, XCVII, No. 5, pp. 217-268

54 Curability of Cancer of Cervix of Uterus. L. Broun, New York.
55 Newer Teachings of Diseases of Gastro-Intestinal Canal. M. I. Knapp, New York.
56 Medical Education; Unsolved Problem. I. Dyer, New Orleans.
57 *Typhoid; Its Milk-Free Treatment. W. N. Johnson and C. C. Watt, Germantown, Pa.
58 Pulmonary Tuberculosis and Peripheral Nervous System. J. L. Pomeroy, Monrovia, Cal.

59 Scarlet Fever. W. L. Somerset, New York.
60 Prescribing Glasses. D. F. Harbridge, Philadelphia.
61 *Meatotomy. E. G. Baltenger and O. F. Elder, Atlanta, Ga.
62 Case of Apoplectic Malaria. B. Kaufman, Maryville, Cal.

57. **Milk-Free Diet in Typhoid.**—The dietetic treatment on which the greatest reliance was placed by Johnson and Watt for the results obtained in sixty-five cases, and which in their opinion was responsible for the very low percentage of diarrhea, distention, hemorrhages and no perforations, consisted of broths, soups, gruels, gelatin, eggs, sugar of milk and butter. Milk was absolutely eliminated, except in the convalescent stage. Great reliance was placed on gelatin, which was given almost *ad libitum*. About 50 grams of gelatin, or about 1.5 ounce, are necessary. This amount in 1 quart of water gives a 5 per cent. solution, and can be flavored with lemon, vanilla, orange or sherry and sweetened with sugar of milk and be given in divided doses during the day, between other feedings. Gelatin lessens the tendency to hemorrhage, in their opinion, and was largely accountable for the freedom in these cases from this serious complication. If venous thrombosis occurs, gelatin should be stopped. The gruels (barley, rice and oatmeal) may be made of different consistence. It is well to begin with a thin gruel (strained) and note the effect and gradually thicken it if well borne. For barley gruel, thin, use one tablespoonful of Robinson's barley flour to 1 pint of water; boil three-quarters of an hour; for thick gruel use two tablespoonsful of the flour. For rice and oatmeal gruel, use the same proportions as for the barley. Strain all. For adults, add to the gruels the yolks of four eggs, which contain considerable fat, and 4 drams of milk sugar. For children use two yolks of eggs and half the quantity of milk sugar. A pat of butter may be added to the gruel.

During convalescence the same dietetic treatment was observed, except thickening of the gruels, until the tenth day; then two soft-boiled eggs were allowed, and if no rise in temperature occurred, milk toast was allowed the next day in addition to the eggs. Gradually soft diet was allowed, and at the end of the week, if no relapse occurred and convalescence was maintained, the patients were well on their way to full house diet, meat and vegetables. No feedings were allowed at night, with a very few exceptions among the very sick, when little could be taken at a time. In this way much-needed rest was obtained by the patients. They were all roused during the day from 6 a. m. until 9 p. m., if dozing. The spirit was inculcated that they were all cooperating in their own cure. All the water (cold, but not iced) was given which they wanted. After each feeding 5 to 10 drops of dilute hydrochloric acid were given in the water.

Medicinal treatment, outside of routine treatment, was employed symptomatically. For hemorrhage, no food was allowed except gelatin; opium and lead internally and ice to the abdomen. For distention, same diet and oil of turpentine in doses of 2 to 5 drops in emulsion; passing of rectal tube and enteroclysis with salt solution, allowing two hours for 1 quart and one hour for 1 pint and given three or four times a day. For nephritis, abundance of water and potassium citrate. For diarrhea, gelatin alone or with gruels made very thin; bismuth, opium and lead. Constipation required enemas, simple or high compound, consisting of magnesium sulphate, 1 ounce; glycerin, 2 ounces; turpentine, 2 drams, and water 1 pint, and irrigation of bowels. The routine treatment consisted of cold spongings, lasting from fifteen to thirty minutes, and given every three hours if temperature was 102.5 F. or over, by axilla. In the case of new patients the temperature of the water at first was 85 F., gradually reducing it as the patients became accustomed to it to 75 F. and 65 F. and lower, even to ice water if it was well borne and caused no chill. In children the temperature of the water was on an average about 10 degrees higher than for adults, and no ice water.

Hexamethylenamin was given to adults in doses of 5 grains four times daily, and to children, 2 to 3 grains at same intervals. There were only four deaths in the series, which the authors consider were inevitable from the start; that is, from the date of admission. All the doomed patients were highly toxemic, and had been cared for at home for a greater or less length of time in a very poor and haphazard manner. Two were post-puerperal patients, and in one the stage of invasion began a very few days after termination of labor, and, added to this, was the grief caused by the death of her baby. In the third fatal case a septic thrombosis occurred in the left median basilic vein and right popliteal, causing moist gangrene of both extremities. The fourth and last case occurred in a colored boy, aged 5 years, of tuberculous history, in whom basilar meningitis developed, whether of a typhoid, tuberculous or mixed infection was not determined.

61. **Meatotomy.**—Painful urination after meatotomy and the necessity for subsequent instrumentation to prevent the cut surfaces from growing together, was prevented by the authors by cauterizing the incised area with a saturated solution of nitrate of silver in concentrated carbolic acid.

New York State Journal of Medicine, New York

January, XIII, No. 1, pp. 1-60

63 Public Health Work in Cities. F. E. Fronczak, Buffalo.
64 National Department of Health and National League for Medical Freedom, or Organized Medicine vs. Organized Quackery. W. J. Robinson, New York.
65 Public Health Education Among Women. C. B. Lattin, Buffalo.
66 Public Health and Child. L. Kerr, Brooklyn.
67 Pollution of Harbor Waters of New York, Especially Referring to Bearing on Health. L. R. Williams, New York.
68 Owen Bill. R. E. Connell, Washington, D. C.
69 Milk as Factor in Promotion of Public Health. G. R. Pisek, New York.
70 Advisability of Amending Articles II and III of Public Health Law. W. B. Hainbidge, Ogdensburg.
71 Water Pollution and Typhoid. H. R. Hopkins, Buffalo.
72 Epidemiology of Typhoid. T. Horton, New York.
73 Surgical Treatment of Prolapse of Uterus. C. C. Barrows, New York.
74 Uterine Fibroids Complicating Pregnancy. R. Waldo, New York.
75 Early Diagnosis of Extra-Uterine Pregnancy. R. H. Fowler, Brooklyn.
76 Uterine Fibroids. W. H. Coe, Auburn.
77 Possible Helps in Control of Black and White Plagues. J. Roby, Rochester.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

January, XVI, No. 1, pp. 1-47

78 Ankylosis of Spine. A. McGlennan, Baltimore.
79 Advantages of Simple Endoscopic Tube. A. G. Brenizer, Charlotte, N. C.
80 Five Patients Operated On Second Time for Extra-Uterine Pregnancy. S. McGuire, Richmond, Va.

Ophthalmic Record, Chicago

January, XXII, No. 1, pp. 1-58

81 Case of Unusual Atrophy of Chorioid. B. Chance, Philadelphia.
82 Dentistry and Optometry; A Parallel. W. H. Crisp, Denver.
83 *Atrophy of Optic Nerve Following Injection of Olive Oil and Lanolin for Removal of Wrinkles. W. A. Fisher, Chicago.
84 Case of Injury in Which Six Pieces of Steel Were Discovered in an Enucleated Eye, Only One Piece Being Found by Roentgen-Ray. F. Allport, Chicago.
85 Glaucoma. J. W. Good, Winnipeg, Manitoba.

83. **Atrophy of Optic Nerve.** The history of Fisher's case is as follows: Equal parts of olive oil and lanolin were injected under the skin for the removal of a wrinkle or frown between the eyes, no irritation occurring after this injection. About seven weeks after the first injection a second one of the same kind was given which produced so great a reaction that the patient was unable to leave the doctor's office until four hours after the injection. The patient says she felt as if the lower eyelid had been closed or pushed up and a great deal of swelling around the point of injection. She first noticed the loss of vision five days after the injection, and from that time the blindness was complete. The swelling at the point of injection persisted about two weeks, but the feeling that the lower lid was being pushed up lasted only several days. The patient says that there was much swelling on the inner side of the unaffected eye, inner canthus feeling like a cord, but there was no swelling on the left side. When she observed the loss of vision of the left eye she also noticed a swelling of the inside of the right eye. The condition of the eyes two months after the second injection was as follows: Right fundus perfectly normal; vision 20/20; fields normal. The left eye presents a picture of optic atrophy. The pupil of the left eye does not contract when the light is thrown into it, but does contract when light is thrown into the right eye. The nerve head is white, the edges are sharply cut and well defined and the arteries are contracted; other than this the ophthalmoscopic

findings are normal. Six months previous to the loss of sight vision was 20/20 in each eye.

Ophthalmology, Seattle, Wash.

January, IX, No. 2, pp. 153-319

86 Foreign Bodies Within Eye or Orbit. W. K. Rogers, Columbus, Ohio.
87 Operative Treatment of Keratokonus. Grunert, Bremen, Germany.
88 Heredity in Relation to Eye. G. F. Libby, Denver.
89 Roentgenography of Foreign Bodies in Eyeball. G. H. Stover, Denver.
90 Colored Glasses for Hunting and as Protection Against Snow and Other Light. F. Schanz, Dresden, Germany.
91 Visual Symptoms of Accessory Sinus Disease. P. Friedenberg, New York.
92 New Antiglaucomatous Operations. L. Dor, Lyons, France.

Philippine Journal of Science, Manila

August, VII, No. 4, pp. 271-422

93 *Etiology of Beriberi. R. P. Strong and B. C. Crowell, Manila, P. I.
94 *Idem. E. B. Vedder, U. S. Army.

93. **Etiology of Beriberi.**—The object of the authors' study was to determine definitely, if possible, whether beriberi, as it occurs in the Philippine Islands, is an infectious disease or whether it is one which has its origin in disturbances in metabolism, brought about by the prolonged use of polished rice as a staple article of diet. The experiments were carried out in Bilibid prison, in which institution the hygienic conditions may be said to be almost ideal. The subjects on which their experiments were performed were entirely isolated, and no case of beriberi had been known to occur among them since their confinement. A number of prisoners, under sentence of death, were selected, and the nature of the proposed experiments carefully explained to them in their own dialect. Twenty-nine of the number volunteered. The volunteers were divided into four groups. The food used was weighed for each meal and cooked outside of the prison in a special kitchen by a special cook, in a clean manner and under very careful supervision. At first it was divided by weight, but it soon became possible to estimate sufficiently accurately the division into equal parts. Each man's food was put into a special dinner pail marked with his number and so served to him. A record was taken at the close of each meal of the amount eaten by each man; it was estimated in fractions of the amount served and expressed in grams. The rice was served hot; it was, of course, always freshly cooked for each meal, as were all the articles of the diet, consisting of bacon, onions, lard, bananas, sugar, bread and starch.

It is evident that among the individuals comprising the experiments beriberi was produced only by means of the diet, and that the disease has, therefore, a true dietetic causation. It is further evident from the experiments that beriberi develops owing to the absence of some substance or substances in the diet necessary for the normal physiologic processes of the body. Without the supply of such substances in the food, beriberi results. Such a substance or such substances are evidently present in red rice and in rice polishings, and also in small amount in the alcoholic extract of rice polishings, and when these articles are added to what would appear to be an otherwise physiologically proper diet, they usually prevent the development of the symptoms of the disease. In some instances, however, even when these substances are constituents of the diet, when the diet is without variation and composed of very few articles and the individual suffers from loss of appetite and the assimilative functions appear to be poor and he loses markedly in weight, symptoms of beriberi may develop in such individuals. However, such symptoms may be dispersed by causing a variation in the diet by the addition of other nutritious substances to it. It is also evident from the experiments that the disease is certainly not an infectious one in the sense in which the term is usually employed. The rigid isolation of the prisoners undergoing the test would seem to exclude the possibility of the introduction of an infectious agent through any other individual or by the introduction of any article. And although the individuals of the groups all mingled freely together, there was no tendency of the disease to spread. It is also noteworthy that the cases of beriberi developed under the most favorable hygienic conditions with exception in regard to diet. It is not probable that the infection could have been introduced with the food, since this was all freshly cooked, and at a temperature at which only a spore-bearing organism would survive. The food was also eaten a very short time after being cooked. Moreover, if the infection had been introduced with the food, the incidence of the disease should have been the same in all of the groups, which it was not. No fermentation of the rice employed occurred either before or after it was cooked, so that it would appear that the action of such bacteria as have been described by Kohlbrügge and Bréaudat could be excluded.

It has been suggested that a diet of white rice predisposes to the disease, since it furnishes a better medium for the development of the specific organism which resides in the intestine of the host, and that the red rice or extract of polishings forms a preventive for the development of such a specific organism. There is no definite evidence of such an hypothesis, and, moreover, the results obtained in the experiment would argue against it, since in two instances, at least, distinct symptoms of beriberi were present in individuals who had received these substances in the diet. It cannot be claimed with reason that the resistance of the individuals having been lowered by weakness and loss of weight, the specific organism residing in the intestine of the individual was able to increase and multiply and produce the disease; for in several instances in which the loss of weight of the individuals was marked and their general condition poor, as was manifested by the occurrence of erosions in and at the angles of the mouth, sore tongue and conjunctivitis, no symptoms of beriberi developed.

Indeed, from the experiments there is no evidence of any nature which suggests that beriberi is an infectious disease, and, on the contrary, the evidence is definite that beriberi in the Philippine Islands is due to the prolonged consumption of a diet which lacks certain substances necessary for the normal physiologic needs of the human body. That the disease encountered was true beriberi was confirmed definitely by the lesions encountered in the pathologic study.

As to the definite chemical nature of the substance or substances in the food whose presence prevents the development of beriberi, the authors hold that further investigations are necessary, but from a practical standpoint as we are cognizant of the etiology of the disease, its cure and prevention is a simple problem. For the prevention and cure of beriberi in man, all that is necessary is that he shall be supplied with a liberal nutritious diet suitable to the physiologic needs of the body. Recent researches have thrown much light on the question of the nature of the protective substance in the diet. Nevertheless, the opinions are not yet in accord in regard to its exact chemical nature, which still appears to be unknown. Although it seems quite definite that a rice containing 0.4 per cent. of phosphorus will prevent the appearance of polyneuritis in fowls, nevertheless, from the authors' experiments, it is evident that beriberi in man may be produced by rice containing 0.37 per cent of phosphorus pentoxid when it forms the staple article of a little varied diet. Therefore, the question arises as to whether the margin of safety is sufficient between such a rice and that containing only 0.4 per cent. of this substance. Since it has been generally admitted that the higher the phosphorus content of rice the less is the liability of that rice to produce beriberi, and since Fraser and Stanton found as an average result of all their examinations that unpolished rice contained 0.54 per cent. of phosphorus pentoxid and Aron found that unpolished rice in the Philippine Islands contains 0.557 per cent. of phosphorus pentoxid and freshly husked rice 0.455 per cent., the authors emphasize that before legislation is enacted it would seem to be advisable to consider carefully the question of the amount of phosphorus pentoxid which a rice should legally be required to contain in order for it to be regarded as an unpolished rice and to be exempt from taxation in the Philippine Islands.

94. **Idem.**—In Vedder's experiments the administration of large amounts of alcohol has failed to produce neuritis in fowls. He found that fowls develop polyneuritis when fed on a diet containing a sufficiency of all the alimentary principles, providing no one of the ingredients of this diet contains the neuritis-preventing substance. The neuritis-preventing sub-

stance is therefore not volatile, but is destroyed by heat. It is not an inorganic salt and is probably not an alkaloid. Since it has been shown that this substance is not a fat, proteid, inorganic salt, or alkaloid, it seems probable that it is an organic base as claimed by Funk.

Vermont Medical Monthly, Burlington

January, XIX, No. 1, pp. 1-26

95 Etiology of Infectious Diseases. J. F. Anderson, Washington, D. C.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

January 18, I, No. 2716, pp. 101-148

1 *Pericolitis. T. Carwardine.
2 Drainage of Abdomen Under Various Conditions of Inflammation. A. E. Barker.
3 *Appendicostomy in Place of Colostomy for Relief of Obstruction Caused by Irremovable Cancer of Rectum and Colon. W. G. Spencer.
4 Gangrene of Vermiform Appendix and Coil of Small Intestine: Operation: Recovery. J. D. Malcolm.
5 Two Cases of Gangrenous Appendicitis with Unusual Histories. G. S. Hughes.
6 Metabolic Utility of Rectal Feeding. N. Mutch and J. H. Ryffel.
7 Renal Calculus in Childhood. R. Ollerenshaw.
8 *Qualitative and Quantitative Effect Observed on Polymorph Neutrophil Leukocytes in Treatment of Tuberculosis by Tuberculin. E. H. Black.
9 Suspension Laryngoscopy. E. D. Davis.
10 Recovery After Taking Eight and Three-Quarter Grains of Corrosive Sublimate. A. L. Fuller.

1. **Pericolitis.**—Pericolitis, according to Carwardine, is a frequent accompaniment of inflammatory affections of the appendix and gall-bladder. Its persistence as bands and adhesions may give rise to symptoms after the successful treatment of the original focus, particularly in appendicitis. In wandering kidney it is now demonstrated that pericolitis may coexist with encysted intraperitoneal collections of fluid. In the surgery of the right loin, Carwardine says, more attention will doubtless be paid to this associated condition by more complete examination of the region at the time of operation; and, by extended observation, the pathology of vague pains and after-pains will be more fully understood.

3. **Appendicostomy in Cancer of Rectum and Colon.**—In cases of cancer of the rectum and colon too far advanced for excision, Spencer says, colostomy, in particular left inguinal colostomy, is often an operation in excess of the requirements; and that in such cases appendicostomy can afford sufficient relief, while avoiding the great discomfort and disability provoked by colostomy. There is no sufficient evidence that colostomy checks the progress of the cancer itself and it does not prevent pain from setting in when the pelvic nerves become involved. Left inguinal colostomy is especially indicated for inoperable cancer of the lower part of the rectum; when the disease is situated higher up appendicostomy may be substituted. Even when the colostomy has been performed in a completely successful way, yet the irregular escape of gas and feces, excited by any unusual incident, is the cause of grave discomfort. The patient, if a man, finds himself unable to dispense with the services of a nurse and when the advance is slow the continuous attendance of a nurse becomes very trying.

Spencer has successfully employed appendicostomy, opening just at the funnel-like junction with the cecum as seen when the appendix is drawn out. Into this is inserted a winged-rubber catheter, or a glass cannula with a flange which is fixed by turning in the margins as described in the gastrostomy method known by the names of Kader and Senn. Such a fistula will close spontaneously if the tube be soon left out, say after ten days. If a tube is kept in, a valvular fistula becomes established. If after, say three months, the catheter is then omitted to be regularly passed, the fistula will tend to scab or skin over, but is readily reopened. By attaching rubber tubing and a funnel to the outer end of the catheter fluid may be run in or gas and fecal fluid siphoned off at will, without moving the patient or his dressings. When the distention has been once relieved, an ounce or two of olive oil, shaken up in a pint of soap and water, and run in early in the morning, will induce a motion per rectum in an hour or so, sufficient for the next twenty-four hours. If olive oil is not sufficient, a dram or more of castor oil or magnesium sulphate may be added, but excess excites repeated motions and has to be avoided. Scybala are got rid of by increasing the amount of soap and water run in. When the motions are thus regulated there is but rarely any escape of gas or fecal fluid by the fistula and the patient can get about with a pad and bandage over the fistula, without fear of having to change it or of any fecal odor being perceptible. Should he find later on, as in the few, that the bowels can be regulated by aperients and the catheter is no longer passed, the fistula will scab over and then no dressing at all is required.

The cases in which Spencer has performed appendicostomy divide themselves into three classes: 1. Patients with acute intestinal obstruction who survived only a few days. 2. Patients who lived for months while the disease pursued its course to the end. 3. Patients who returned to active life. During this period he has performed left inguinal colostomy in two cases for inoperable cancer involving the lower third of the rectum and in two other cases certainly suffering from inoperable cancer he advised that there were no sufficient indications for any operation at that time.

8. **Effect of Tuberculin on Neutrophil Polymorphs.**—In certain cases of tuberculous disease, Black says, tuberculin treatment increases both the quality and quantity of the leukocytes. Further, since it has been shown that the more mature polymorph neutrophils are of greater phagocytic activity and also that the relative proportion of these is increased by tuberculin treatment, as is likewise the total number of leukocytes per cubic millimeter, the total result must be to increase the resistance of the whole body organism against the infection.

Dublin Journal of Medical Science

January, III, No. 793, pp. 1-80

11 Roentgen Rays in Medical Diagnosis. W. G. Harvey.
12 *Interesting Complications of an Hysterectomy. A. Smith.
13 Carbuncles Cured by Colloid Mercury. G. A. Stephens.

12. **Complications of Hysterectomy.**—Four months ago Smith saw a patient, whose symptoms, owing to age and unpleasant vaginal discharges, suggested malignancy. Under ether he was able to satisfy himself that the cause of her trouble was multiple fibromata of the uterus without any evidence of malignancy. A subtotal hysterectomy was successfully performed. The operation over, Smith proceeded to make the peritoneal toilet and felt his finger pricked by some sharp instrument. On investigating the cause he found the point of a needle sticking through the wall of a small intestine. To prevent the possibility of leakage a purse-string suture of fine catgut was inserted so as to encircle the needle opening into the intestine, the end being tightened together as the needle was being withdrawn. He searched further, and found more needles, some lying in the omentum away from any coil of intestine. Others were found projecting through the wall of the intestine, but covered by a smooth covering as if a diverticulum had been made from the intestinal wall. Others had perforated the intestine, but a protective omental adhesion surrounded the needle. The appendix which dipped into the pelvis almost to the floor, was hypertrophied and markedly congested. On palpation a hard body could be felt. It was removed. A skiagram of the appendix showed two needles and one pin lying parallel to each other, the heads being down. All the needles, ten in number, were tarnished by H_2S. They were extremely brittle and of the same size.

Nothing untoward happened until the end of the third week. Preparations were being made for the patient to get up. On the morning of the appointed day, while stooling, the patient was seized by an acute pain referred to the anus. On making examination a needle was found stuck in the mucous membrane and was removed. Some days following this the patient complained of abdominal pains, aggravated by pressure over both iliac regions. Palliative measures gave little or no relief. The possibility of more needles being present was considered, and skiagrams were made. Three needles were located, one on the right side evidently broken in two, another on the left side at pelvic brim, and a third somewhere about

the os pubis. Smith reopened the abdomen. It was felt that although the presence of needles was demonstrated, their precise position, whether in the intestine or outside it, could not be determined. Dipping his fingers into the left iliac fossa Smith found at once a needle perforating the sigmoid flexure of the colon, but well protected by omental adhesions. A broken needle, covered by its fibrous envelope, was removed from the small intestine on the right side. The third needle, that is, the one indicated lying close to the os pubis, was found in the omentum. Smith believes that this is the first recorded instance of three sharp-pointed metallic foreign bodies being found in the appendix.

Journal of Obstetrics and Gynecology of British Empire, London

December, XXII, No. 6, pp. 317-380

14 Some Twentieth Century Problems in Relation to Marriage and Childbirth. J. H. Ferguson.
15 Female Sterility as Salient Feature of General Tuberculosis of Peritoneum. E. H. Tweedy.
16 Central Placenta Praevia Successfully Treated by Cesarean Section. W. D. Macfarlane.
17 Puerperal Pelvic Thrombosis: Exploratory Laparotomy: Ligature of Left Common Iliac Vein. A. J. Wallace.
18 Second Case of Pernicious Vomiting of Pregnancy. R. Dunsmuir.
19 Spontaneous Rupture of Uterus and Pulmonary Embolism. A. Stookes.
20 Large Mass of Uterine Mucous Polypi Associated with Myomata. C. H. Whiteford.

Lancet, London

January 18, I, No. [4664], pp. 117-214

21 Etiology of Endemic Goiter. (To be continued.) (A Review.) R. McCarrison.
22 Myxedema. W. H. White.
23 Methods of Research Available in Study of Medical Problems. M. Greenwood.
24 Treatment of Pelvic Inflammation by Auto-Inoculation. H. Chapple.
25 *Acute Intestinal Obstruction Due to Volvulus of Cecum. P. R. Wrigley and M. Moritz.
26 Ocular Myoclonus. E. Thomson.
27 Tetanus Treated by Intravenous Injections of Paraldehyd and Copious Injections of Normal Saline Resulting in Cure. O. Atkey.
28 Non-Syphilitic Arteritis Obliterans ("Thrombo-Angeitis" of Leo Buerger), with Intermittent Claudication of Left Lower Extremity. F. P. Weber.
29 Gapes (Syngamus) in Man, an Occasional Helminthic Infection. R. T. Leiper.

25. **Acute Intestinal Obstruction.**—The patient, a female, aged 29 years, had been in good health, except for three attacks of appendicitis, the last being five weeks before the present illness, when she was operated on and her appendix removed; the wound was sutured without drainage. From this operation she made an uneventful recovery and left the hospital in two weeks' time. Three weeks later she was seized with acute abdominal pain in the region of the umbilicus, followed by vomiting and profuse diarrhea. She vomited greenish fluid and was purged every few minutes, but had not passed flatus for some hours. Twelve hours after the onset of the attack she was admitted to the hospital. On admission she looked extremely ill, her features were pinched and her tongue was dry and furred. Her temperature was 100 F. and her pulse-rate 114. On inspecting the abdomen it was found to move freely with respiration and a large mass of the size of a cocoanut was seen in the right iliac and umbilical regions and in this situation waves of peristalsis occasionally occurred. Palpation of the abdomen induced vomiting, which, though not fecal, was suggestive. There was a little involuntary rigidity and extreme tenderness of the abdominal wall on palpating the swelling, which was tympanitic on percussion. Rectal examination revealed great tenderness on the right side of Douglas' pouch. A diagnosis of intestinal obstruction was made and immediate operation proceeded with. The abdomen was opened. Numerous distended coils of small intestine presented, and there were many adhesions between these, the omentum and the peritoneum in the vicinity of the old scar. The adhesions were separated and ligatured. Further exploration with the hand in the abdomen revealed a large, tense swelling in the middle line of the abdomen; by a little manipulation the swelling was delivered on the surface of the abdomen and was seen to consist of an enormously distended cecum and a considerable part of the ascending colon rotated anticlockwise around its long axis one complete twist and then acutely flexed, so that the cecum was lying transversely in the abdomen with the fundus of the cecum just beyond the middle line above the brim of the pelvis. The cecal wall was very thin and presented several gangrenous patches, making it useless to attempt to unravel the volvulus, so, after packing carefully round with gauze swabs, the whole of the cecum and part of the ascending colon, with the terminal portion of ileum, were resected between clamps, the mesentery ligatured and the diseased bowel removed; the free ends of the ileum and the ascending colon were then crushed and closed by a stout ligature of linen thread and each end inverted by a purse-string suture of linen thread. A lateral anastomosis was then made between the terminal portion of the ileum and the ascending colon by continuous thread sutures. The patient made an uneventful recovery, the bowels being moved naturally on the sixth day after operation. The wound healed by first intention and she left the hospital on the twenty-first day. The resected portion of bowel measured 18 inches long by 12 inches in width. It was dark grey in color, and showed many small patches of gangrene which appeared on the point of perforating. The patient has been seen some months later and was in good health.

Quarterly Journal of Medicine, London

January, VI, No. 22, pp. 125-292

30 *Case of Dyspituitarism. G. von Bonin.
31 Fragility of Red Blood-Corpuscles. G. G. Butler.
32 *Iron in Blood. P. H. C. Fowell.
33 *Premature Ventricular Beats in Heart-Block. A. E. Naish.
34 *Auricular and Nodal (?) Extrasystoles. E. E. Laslett.
35 *Exceptional Types of Slow Heart Action. T. Lewis.
36 Case in Which High Speed of Auricles Did Not Produce Tachycardia. W. E. Hume.
37 *Congenital Family Steatorrhea. A. E. Garrod and W. H. Hurtley.
38 Artificial Pneumothorax. E. Rist.

30. **Case of Dyspituitarism.**—The principal points of importance which emerge from a collocation of the published materials and some of which seem to deserve special attention in the light of the foregoing discussion, are briefly summarized by von Bonin as follows: There are hardly any cases of pure hypopituitarism, but both types are generally mixed. Sexual infantilism and adiposity are symptoms of hypopituitarism and are generally, if not always, found associated with acromegaly, i. e., hyperpituitarism. This would be accounted for by Cushing's theory that one secretion enters the blood directly, while the way for the other to the third ventricle is blocked by the pressure from the tumor on the infundibulum. The changes in the histologic appearance of the thyroid in cases of acromegaly are probably due to the same physiologic fact: a lower demand for the thyroid products on the part of the body-cells. The changes in the thyroid and in the testicles are due to a primary state of hypopituitarism. The growth-changes in acromegaly are not confined to particular parts of the body, but occur in all parts of the skeleton. Those growth-changes are, according to Keith, explained by the assumption that the secretion of the pituitary body acts as a hormone, which renders the osteoblasts more sensitive to mechanical and other stimuli.

32. **Iron in Blood.**—The method used by Fowell in his research is a modification of Jolles'. It was first described by Antenrieth in 1910. In the course of this work 125 estimations have been made. He found that in all individuals there is an excess of iron in the blood over that which is combined with hemoglobin. In normal persons such excess bears a varying ratio to the total amount of iron, but that such variation is, within definite limits, with an average of 4.2 to 1. In simple secondary anemias the same holds good, but the ratio is on the whole a little higher: average, 3.7 to 1. In pernicious anemia the ratio is markedly elevated, approaching 2 to 1. In cirrhosis of the liver there is no excess of iron in the blood and the ratio lies between the normal limits.

33. **Premature Ventricular Beats in Heart-Block.**—A case is presented by Naish showing the following phenomena: Complete and prolonged dissociation alternating with periods of 2:1 rhythm and finally leading through 2:1 into 1:1 rhythm. Ventricular extrasystoles appear usually after exercise. When the dissociation was complete, the period of extrasystoles was

followed by slowing of the ventricular rhythm, the auricular rhythm remaining unaffected: on the other hand when 1:1 rhythm was present the rhythm of the whole heart became slow and irregular after a bigeminal period. The pauses after the premature contractions were often considerably shorter than the intervals between the rhythmic ventricular beats; the shortening is referred to the momentarily depressed state of conduction. When partial dissociation was present the onset of extrasystoles sometimes led to a higher grade of dissociation. Aberration of the supraventricular impulses was present.

34. **Auricular and Nodal (?) Extrasystoles.**—An instance of coupled rhythm is described by Laslett in which the second beat of each couple is due to an auricular extrasystole. This has persisted for two years. In another patient, suffering from anemia, the regular occurrence of two successive auricular extrasystoles after every second normal beat was observed after exertion. In a third patient, on recovery from an attack of auricular fibrillation, very frequent auricular extrasystoles, both single and multiple, were observed. The relation of auricular extrasystoles to paroxysmal tachycardia and auricular fibrillation is commented on. In the same patient a coupled rhythm was frequently present in which the second beat of the introductory couples was always, and that of the terminal couples occasionally, due to an auricular extrasystole, while the second beat of the intermediate couples was either a ventricular or in some instances probably a nodal extrasystole. Both the auricular and nodal extrasystoles were sometimes followed by a pause which was shorter than the normal pulse period. The nature of the pause after an auricular extrasystole is discussed and it is suggested that occasionally an auricular or nodal extrasystole may be interpolated with simultaneous depression of the sinus rhythm.

35. **Exceptional Types of Slow Heart Action.**—Three cases of slow heart action of unusual form are described by Lewis. Case 1. In a man who presented a continuous slow action of the whole heart, irregularity of the ventricle was observed. This was due in part to the building of homogenetic impulses at two centers and at almost equal rates. The centers of impulse formation lay at the normal pacemaker and in the region of the a-v node. Case 2. Curves are described from a young subject who displayed slow and at times irregular heart action. The disorder, as illustrated by polygraphic and electrocardiographic curves, was of a hitherto undescribed form. No trace of auricular contraction, either coordinate or incoordinate, could be discovered in any record, venous or electrocardiographic. Case 3. A case in which the Adams-Stokes' symptom-complex was present is described. The pulse-rate was from 26 to 33 beats per minute. The ventricle beat in grouped fashion: the first beat of each group was of normal origin; the second beat of each group was premature and arose in the ventricle, it was also retrograde; the third beat, when it occurred, was premature and arose in the ventricle, but was not retrograde, and the pulse was consequently regular.

37. **Congenital Family Steatorrhea.**—A boy, aged 8 years, has been subject from infancy to true steatorrhea, i. e., the passage from the bowel of liquid fat, which solidifies on cooling. He is the second of a family of five children of parents who are first cousins. The fifth child, also a boy, who died at the age of 11 months, was similarly affected from birth. The boy exhibits no other morbid symptoms, is well grown and nourished, and in no way infantile. There are no signs of pancreatic disease, unless the steatorrhea be such. He has never been jaundiced and cholalic acid can be detected in his feces. He has no diarrhea, nor other manifestations of disease of the intestines and on a diet containing very little fat his stools assume a normal appearance and consistence. Analyses of the stools show that of the fat which he takes by the mouth he excretes some 25 per cent. in his stools and this percentage of loss is maintained when the fat in his diet is doubled. In other words, the percentage wasted is independent of the amount taken. On a constant mixed diet, containing 177 gm. of fat, the total fat in the dried feces as neutral fat in the stools exceeds 60 per cent. of the total fat; but when the fat in the diet is reduced to 92 gm., the ratio of split to unsplit fat in the feces is not excessive. Improved saponification is not followed by improved absorption and it is evident that the impairment of absorption is not dependent on deficient splitting of fats. Neither drugs nor enzymes brought about any improvement of utilization of fats. Some of these preparations increased the fat-splitting, but the pancreas preparations, although they had this effect, appeared to aggravate the defect of absorption. The boy is presumably the subject of a rare inborn error of fat absorption, probably a Mendelian recessive characteristic, but their investigations have not enabled the authors to determine where this error lies.

Archives des Maladies de l'App. Digestif, Paris

November, VI, No. 11, pp. 681-660

39 Appendicitis of Blood-Borne Origin. (Les appendicites hématogènes et l'élimination microbienne par l'appendice.) C. Richet, Jr.

40 Intestinal Disturbance from Sexual Organs. (Perturbations de l'équilibre intestinal sous l'action des excitations génésiques chez la femme.) J. J. Matignon.

41 Metastasis in Spine and Meninges, Simulating Cerebral Syphilis, in Course of Previously Latent Gastric Cancer. Mazel and Devic.

Archives de Médecine des Enfants, Paris

January, XVI, No. 1, pp. 1-80

42 Alimentary Fever. (Syndrome de Finkelstein.) F. Figueira and U. Lopes.

43 Cardiovascular Disease in Children. (Etude des maladies de l'appareil circulatoire chez l'enfant.) S. Moreira.

44 Prevalence of Helminths in Children at Rio de Janeiro. J. G. Faria.

45 Resistance of Children to Fatigue. Lesage and Collin.

46 Curable Meningitis in Children. (Etats méningés curables chez les enfants.) J. Comby.

Archives Générales de Chirurgie, Paris

December, VI, No. 12, pp. 1389-1516

47 Nervous Joint Disease Without Signs of Tabes. P. Mauclaire and L. Girard.

48 Technics for Formation of New Vagina. R. Grégoire.

49 Aneurysm of the Carotids; Two Cases. G. Lébault and D. Clavaud.

Archives Mensuelles d'Obstétrique et de Gynécologie, Paris

December, I, No. 12, pp. 481-615

50 Operative Treatment of Prolapse of the Uterus. (Traitement des prolapsus génitaux par la bascule antérieure de l'utérus avec suture des ligaments ronds aux releveurs de l'anus.) J. Abadie.

51 Hypophysis Extract in Obstetrics. (Faits pour servir à l'étude de l'action ocytocique de l'extrait du lobe postérieur de l'hypophyse.) A. Siguret.

52 General Principles and Results of Operative Treatment of Puerperal Phlebitis. J. Vanverts and H. Faucot.

Journal de Chirurgie, Paris

October, IX, No. 4, pp. 429-540

53 Anatomy of the Carotid Region. (La voie carotidienne.) R. Picqué.

November, No. 5, pp. 541-684

54 Grafting of Arteries. (Technique des greffes vasculaires appliquées au retablissement de la continuité des artères.) P. Moure.

December, No. 6, pp. 685-896

55 Advantages of Indirect Fixation of Uterus by Operation on Ligaments. (Ligamentopexie par le procédé de Doléris.) A. Gosset.

Journal de Medécine de Bordeaux

November 17, XLII, No. 46, pp. 729-744

56 *Tincture of Iodin in Treatment of Typhoid Fever. X. Arnozan and J. Carles.

December 8, No. 49, pp. 781-800

57 Tour of Inspection and Study Through the Hospitals of Paris. X. Arnozan. Commenced in No. 47.

December 15, No. 50, pp. 801-816

58 Diagnosis from Infant's Cry. R. St.-Philippe.

December 22, No. 51, pp. 817-832

59 Medication by the Rectum. (Le petit lavement médicamenteux.) A. Guérin.

56. **Iodin in Typhoid.**—Arnozan and Carles have given tincture of iodin internally in forty-four cases of typhoid fever, and declare here that the patients recovered more rapidly and the mortality was less than under any other method of treatment. Their patients included twenty women, two little girls and four boys. Four of the patients died, one from errors in diet, one from ileus from paralysis, one from absolute intolerance on the part of the stomach, from the onset of the disease, and one from early perforation of the bowel. Phlebitis was

noted in one patient, a periosteal abscess in two and three patients had intestinal hemorrhage. They gave 15 or 25 drops of tincture of iodin a day in wine or milk. Raynaud reported in 1904 90 per cent. recoveries in numerous cases; his formula is 20 or 25 drops of tincture of iodin with 0.01 gm. potassium iodid in 150 gm. water. All to be taken in twenty-four hours. Others have reported favorable results with it.

Journal d'Urologie Méd. et Chir., Paris

December, II, No 6, pp. 789-936

60 The Pulse-Kidney Index and the Urea Index. (Coefficient sphygmo-rénal et coefficient uréo-sécrétoire.) A. Martinet.
61 Movable Kidney with or Simulating Chronic Appendicitis. (Rein mobile et Appendicite.) V. Hourtoule.
62 Ileus from Cystic Kidney. (Occlusion intestinale algue par un rein polykystique.) J. W. van Bisselick.
63 Mechanism of Chronic Retention with Enlargement of Prostate. G. Li Virghi.
64 Flaring Up of Old Urethritis During Influenza: Autovaccine Therapy; Recovery. E. Roucayrol and R.-Badet.
65 Calculus Formed in Bladder Around Thermometer. (Corps étranger de la vessie.) H. Brin.
66 Beware of Injuring the Urethral Epithelium and Testicles of Our Patients. (Respectons l'épithelium cylindrique de l'urètre de nos malades et leurs testicules.) J. Janet.
67 Nascent Iodin Fumes in Treatment of Cystitis. G. Farnarier.

Lyon Chirurgical, Lyons

January, IX, No. 1, pp. 1-96

68 *Tuberculous Cystitis in the Elderly. V. Rochet.
69 Operative Treatment of Impending Gangrene. (Traitement des oblitérations vasculaires.) E. Villard and E. Perrin.
70 *Operative Treatment of Acute Nephritis. (Décapsulation rénale dans les néphrites algues toxiques.) G. Tisserand.
71 Relations Between the Ureter and the Superior Inlet. (Note sur les rapports de l'uretère au détroit supérieur.) A. Chalier and J. Murard.

68. **Tuberculous Cystitis in the Elderly.**—Rochet reports two cases of tuberculous cystitis which had long been erroneously diagnosed as ordinary "painful cystitis in a man over 60 with some enlargement of the prostate." In one case a primary lesion in the kidney explained the trouble, but the kidney lesion had never caused the least disturbance, all the symptoms pointing exclusively to the bladder. A possible tuberculous origin for the cystitis should be suspected in the elderly when the symptoms are not accompanied by hypertrophy of the prostate, no signs of enlargement being evident through the rectum or bladder. Also when the cystitis is extremely painful, with pollakiuria, smarting, milky and occasionally blood-stained urine, and the cystitis is not ameliorated by the usual measures for cystitis from prostate enlargement. Also when the capacity of the bladder is unusually small and there is no residual urine between the exacerbations of the cystitis.

70. **Decapsulation of the Kidney in Acute Nephritis from Poisoning.**—Tisserand reports two cases of acute nephritis due to mercury poisoning with suicidal intent. Both patients succumbed, but the prompt return of urination after the decapsulation strikingly demonstrated the benefit from the decapsulation. It was done on one side only and the anuria was broken up as effectually as if the operation had been bilateral and more extensive. Decapsulation on one side is a very simple operation, he says, and it should be done as a routine procedure and without delay in every case of nephritis from poisoning as soon as anuria is installed.

Lyon Médical, Lyons

December 8, XLIV, No. 49, pp. 949-996

72 Technic for Enucleation of the Eye. Genet and Beissy.

December 15, No. 50, pp. 997-1060

73 Technic for Roentgenoscopy of the Kidneys. (La radioscopie rénale. Ses avantages.) T. Nogier.
74 Composition of the Cerebrospinal Fluid. (Le liquide cephalorachidien.) J. Froment.

December 22, No. 51, pp. 1061-1116

75 *Roentgenography of Kidney and Ureter Stones. T. Nogier and J. Reynard.

75. **Pyelography in Calculus of the Kidney and Ureter.**—Nogier and Reynard describe two cases of calculus, one in the kidney and one in the ureter, the presence and location of which were determined by pyelography. An opaque sound is introduced through the ureter into the pelvis of the kidney and an *x*-ray picture taken. Then collargol is injected through the sound until pain is felt in the kidney region, and another picture is then taken. The collargol outlines the form of the pelvis and calices. The exact location of the calculus is shown and, if it is entirely surrounded by collargol, it is evidently moveable. The operative procedure to be followed depends on the size and location of the calculus.

Presse Médicale, Paris

January 4, XXI, No. 2, pp. 9-20

76 Modern Treatment of Ozena. G. Mahu.
77 *Resection of Varicose Internal Saphenous Vein. (Traitement chirurgical des varices des jambes.) G. E. Vaquié.

January 8, No. 3, pp. 21-28

78 Colloidal Silver in Treatment of Children. A. Netter.
79 The Normal and Pathologic Physiology of the Peritoneum. A. Lippens.

77. **Treatment of Varices.**—Vaquié introduces into the internal saphenous vein at the ankle, after severing the vein between two ligatures, a fine steel rod with an olive crossbar button, about as large as a grain of rice at the tip. The rod is nearly half a yard long (40 cm.), and it is worked up into the vein until the olive can be palpated or seen in the vein on a level with the internal condyle of the femur. The skin is then incised and a ligature is thrown around the vein just below the olive, thus imprisoning the olive. Another ligature is thrown around the vein a short way above and the vein is cut between the two ligatures. The rod is then withdrawn from below, the vein fastened to it above coming down with it, turning outside in like the finger of a glove, and the whole vein thus coming away through the lower small incision. The entire vein is thus removed, with some of its collaterals, and the only incisions are the two minute ones in the ankle and above the knee. Vaquié has been applying this technic for four years and with constant satisfaction. No hematoma or other complication has ever developed. He massages the region after removal of the vein, thus expelling any blood by the two openings. The patient stays in bed two days, the leg raised on a cushion a little higher than the rest of the body. The same technic can be applied to the thigh. He generally operates under spinal anesthesia.

Revue de Gynécologie, Paris

XIX, No. 3, pp. 193-288

80 Technic for Hysterectomy. (Indications et résultats de l'hystérectomie par décollation antérieure.) L. Bazy and E. Chambard.
81 Mesenteric Cysts. (Kystes du mésentère et spécialement kystes chyleux.) Proust and R. Monod.

Revue de Médecine, Paris

December, XXXII, No 12, pp. 945-1036

82 Peripheral Facial Paralysis. H. and A. Nimier.
83 *Tuberculous Nature of Ascites in Cirrhosis, Particularly Laennec's. G. Roque and V. Cordier. Commenced in No. 10.
84 Protracted Malta Fever. (Cas de mélitocoecie prolongée observé dans la région lyonnaise.) J. Courmont, P. Savy and P. Mazel.
85 Pathologic Heredity. J. Cecikas.

83. **The Tuberculous Nature of the Fluid in Cirrhosis.**—Roque and Cordier report in detail the case histories and laboratory examinations in twenty cases of cirrhosis. They find that in all cases of Laennec's cirrhosis, the ascitic fluid is of tuberculous character and origin and causes tuberculosis in animal inoculation. They maintain that the ascitic fluid may be tuberculous even though the cirrhosis itself is not caused by tuberculosis, but they conclude that in the majority of cases the origin of the sclerosis is a toxic infection, generally from tuberculosis, and that alcohol simply favors its development. The cirrhosis is not found in non-alcoholics, neither is it found in alcoholics if there is not preceding injury by bacteria or their toxins.

Revue Médicale de la Suisse Romande, Geneva

November, XXXII, No. 11, pp. 737-796

86 Etiologic Relations Between Variola and Vaccinia. H. Carrière and E. Tomarkin.
87 Fractures of Lower End of the Tibia in Children. Petroff.
88 General Paralysis in Children. F. Naville.
89 Generalized Sporotrichosis with Multiple Nodules. Eleventh Case Reported in Switzerland. C. Du Bois.

Semaine Médicale, Paris

January 8, XXXIII, No. 2, pp. 13-24

90 Syphilitic Cerebellar Hemiplegia. (Hémisyndrome cérébelleux d'origine syphilitique.) P. Marie and C. Foix.

Beiträge zur klinischen Chirurgie, Tübingen

November, LXXXII, No. 1, pp. 1-289

91 *Biological Test in Surgical Tuberculosis. (Diagnose chirurgischer Tuberkulosen aus den pathologischen Ausscheidungen mit Angabe eines neuen Verfahrens im Tierversuch.) R. Hagemann.
92 Conservative Surgery of the Testicles. (Zur Bewertung der konservativen Hodenchirurgie.) J. E. Schmidt.
93 Testicle in Perineum. (Ectopia testis perinealis.) W. Gundermann.
94 Technic for Amputation for Gangrene. Molineus.
95 Extrachorial Gestation. (Extrachoriale Fruchtentwicklung und ihre Bedeutung für die Entstehung kongenitaler Deformitäten.) Linzenmeier and Brandes.
96 Omentum for Plastic Operations in Abdomen. (Wert der freien Netztransplantation im Dienste der Bauchchirurgie nach den Erfahrungen des Obuchow-Krankenhauses.) E. Hesse.
97 Suture of Vessels; Sixty Cases. (Klinische Anwendung der Gefässnaht.) E. Hesse.
98 Stasis Hyperemia in Treatment of Infected Injuries of the Knee. S. Ponomareff.
99 Osteoplastic Operation for Pseudoarthrosis. W. Kauert.
100 Cancer of the Appendix. (Schleimhautnaevi und Primäre Carcinome des Wurmfortsatzes.) G. Luce.
101 Influence of Internal Secretions on Dentition. P. Kranz.
102 Alimentary and Epinephrin Glycosuria in Exophthalmic Goiter and Subsidence After Resection of Thyroid. F. Schulze.
103 Sugar Content in Blood in Exophthalmic Goiter. (Blutzuckergehalt bei Morbus Basedowii und thyreogene Hyperglykämie.) M. Flesch.
104 The Viscosity of the Blood in Exophthalmic Goiter. W. Kaess.
105 Displacement of Trachea by Enlarged Thymus. A. Schubert.
106 Dangers of Nephrotomy. M. Zondek.

91. **Diagnosis of Surgical Tuberculosis.**—Hagemann has found that tuberculous guinea-pigs react with a peculiar skin phenomenon to the intracutaneous injection of human tuberculous material. His experiences demonstrate that the specific toxins in the pathologic products of tuberculous patients induce a specific antibody reaction. The reaction is thus biologic and specific for tuberculosis. The positive response demonstrates the tuberculous nature of the injected material, but a negative response is less instructive. He states that by this means of intracutaneous injection of the products of tuberculous foci, it is possible to make a confident diagnosis even when it is impossible to detect tubercle bacilli or to induce tuberculosis in an inoculated animal by any other means. The most instructive findings were with serous effusions free from tubercle bacilli. Another advantage of the method over all others is the short time required; the positive reaction is evident in twenty-four hours and in forty-eight at latest. Intracutaneous inoculation with tuberculin proved a reliable means of determining whether the animal was already tuberculous or not. To determine the tuberculous nature of the clinical products, he injects the suspected material by the intracutaneous technic in already highly tuberculous guinea-pigs. The amount injected was about 0.1 c.c., generally into the peritoneum; he always inoculated at the same time a healthy guinea-pig, and a second by some other technic. Guinea-pigs inoculated with 1/10 mg. tubercle bacilli become extremely susceptible by the end of the second week, and give a positive response to a dose of 0.000002 gm. tuberculin. They generally die in six or eight weeks. He thus tested the clinical tuberculous products in forty-eight cases and the response confirmed his assumptions in nearly every case; in two instances the reaction was not obtained because the animals proved not to be sensitive. In four cases this intracutaneous method gave a positive reaction when all others were negative, and the course of the cases confirmed the reliability of the specific reaction. It consists in a distinct swelling of the skin, with a bluish red center, this surrounded by a porcelain white ring and outside of this a zone of inflammation. (*Deutliche Schwellung der Haut mit einem blaurotem Zentrum, das von einem porzellanweissen Ring und einer entzündlichen Zone umgeben ist.*) It is possible that this same technic might be applied to the diagnosis of other diseases, cancer, etc., especially those with unknown agents. The findings in the various cases are tabulated for comparison and the method commended.

Berliner klinische Wochenschrift

January 6, L, No. 1, pp. 1-48

107 *The Principles of Drug Giving. (Grundlagen der Arzneibehandlung.) A. Heffter.
108 *Treatment of Intestinal Disease During Last Fifty Years. (Therapie der Darmkrankheiten.) C. A. Ewald.
109 Tumor from Fat Necrosis. (Ueber circumscripte Tumorbildung durch abdominale Fettnekrose und subcutane Fettwucherung.) H. Küttner.
110 *Treatment of Uncontrollable Vomiting in Infants. (Therapie sogenannter unstillbarer Blutungen im Säuglingsalter.) K. Blühdorn.
111 Variability of Pathogenic Microorganisms. G. Bernhardt and O. Ornstein.
112 Suffocation Hemorrhages. (Zur Lehre von den Erstickungsblutungen.) H. Marx.

107. **General Principles of Therapeutics.**—The *Wochenschrift* enters on the second half century of its existence with an article by Heffter, chief of the physiologic-pharmacologic department of the national board of health. He quotes from the founder of the *Wochenschrift*, L. Posner, 1866, "We fill up the space between the diagnosis and the necropsy with Mistura gummosa," and then Heffter reviews the progress of therapeutics during the last fifty years. He says of the efforts to find a specific drug which will destroy protozoa without injury to the patient's tissue cells, that the favorable results obtained on animals have not been reproduced in the clinic. Salvarsan, for instance, is not able to annihilate the spirochetes in man as effectually as it does in the rabbit, so that for the present mercury has by no means been crowded out of the place it has occupied for centuries as the specific for syphilis. Organotherapy has attained practical importance only in respect to the thyroid. All the other organ preparations are based on defective premises and are uncertain in their effects. In most of these preparations, he adds, it is a question of indiscriminating quackery. Pharmacologic topography is proving constantly a more and more complex study; for example, we have learned that caffein while it contracts the blood-vessels innervated by the splanchnic nerve, yet has a directly opposite action on the vessels in the brain and kidneys and on the coronary arteries, dilating them. The main point to bear in mind is that drugs influence an organ by enhancing or reducing its physiologic functioning. A diseased organ is liable to respond more readily to a drug than a sound organ, and the question of individual dosage is the most vital one under all conditions. When a drug fails to display the desired action it is often wise to reduce, rather than to increase, the dose. This is especially advised with epinephrin, atropin and digitalis.

108. **Fifty Years' Progress in Treatment of Intestinal Disease.**—Ewald says in concluding his article, referring to hormonal, that with this, as with so many of the new proprietaries, as soon as they are applied in the clinic on an extensive scale they lose their haloes. If they were merely harmless substances, aside from the waste of money, the matter would not be so bad. But when health and life are sacrificed on the altar of the new remedy, the question arises whether the manufacturing of drugs ought not to be surrounded with greater guarantees. When suddenly a number of cases of serious injury develop and even fatalities occur, there is a possibility of some carelessness in the manufacture of the remedy. Their own interests would naturally lead the manufacturers to be careful in this respect, but is this guarantee enough? Serums are standardized, he remarks, and what is necessary for serums should be exacted for medicines. He says of physical measures in treatment of intestinal disease that time has emphasized the importance of trained skill in applying them. He regards glycerin, oil or paraffin enemas as material progress in treatment of intestinal disease; the paraffin has the advantage of greater convenience and cleanliness. They prove effectual sometimes when other injections fail or have to be given in such amounts that they distend and irritate the bowels. The small amounts of fat acids that form in the oil enemas are liable to have a favorable influence on peristalsis. Great progress has been realized of later years, he adds, in the cooperation of internists and surgeons in the borderland affections. He congratulates internal medicine on its wisdom in throwing off the petty fear of being crowded out of its rights by surgery, but warns surgery not to go to the other extreme and keep in its hands too long and treat "internally" the patients who after the operation need internist care. Another great progress has been the multiplication of sanatoriums where courses of treatment can be given systematically after individual study of the case. This of course implies specialism, but he does not think it is necessary to specialize on a single organ or part of an organ "as in America."

110. **Serotherapy of Uncontrollable Hemorrhages in Infants.** Blühdorn has only three cases to report, but the results of injection of diphtheria antitoxin—as the most convenient form of serotherapy—were so remarkably favorable that he does not wait for further experience to commend it for general adoption. One infant had melena neonatorum, another Henoch's abdominal purpura, and the third hemorrhage from the umbilicus with sepsis and pernicious jaundice. The condition in the latter case was particularly grave; this syndrome is generally regarded as hopeless. He supplemented the serotherapy with a 5 per cent. solution of calcium acetate, giving up to 3 or 6 gm. of the acetate in twenty-four hours. His formula was: Calc. acet., 10; Liq. ammonii anisati, 2; Gummi arab., 1; Saccharin q. s. and water to 200 parts. With hemorrhage the drug has to act rapidly and consequently the dosage must be high; it is not kept up long enough to do harm.

Correspondenz-Blatt für Schweizer Aerzte, Basel

January 11, XLIII, No. 2, pp. 33-64

113 Roentgenoscopy in Internal Medicine. R. Staehelin.

Deutsches Archiv für klinische Medizin, Leipsic

CIX, Nos. 1-2, pp. 1-208. Last indexed December 7, p. 2101

114 The Blood in Lymphatic Leukemia. (Herkunft der sog. "Kern"- r. "Zellschollen" bei lymphatischer Leukämie und die Natur der eosinophilen Zellen.) A. Spuler and A. Schittenhelm.
115 Value of Puncture of the Bone Marrow in Diagnosis. (Zur diagnostischen Knochenmarkspunktion.) A. Spuler and A. Schittenhelm.
116 Experimental Study of Influence on Red Corpuscles of Venesection and Subperitoneal Injections of Blood. (Einfluss der Blutentziehungen und subperitonealen Blutinjektionen auf die Zahl und Resistenz der roten Blutkörperchen.) K. Oczesalski and S. Sterling.
117 Carbohydrate Metabolism in Anemia. (Beziehungen anämischer Zustände zum Kohlehydratstoffwechsel.) S. Isaac and E. Handrick.
118 Relations Between the Organism and Tubercle Bacilli. (Morphologische Beiträge zu den Beziehungen zwischen Organismus und Tuberkuloseerreger.) W. Knoll.
119 Improved Technic for Study of the Heart. (Kombinierte röntgenkinematographische und elektrokardiographische Herzuntersuchung.) T. and F. Groedel.
120 Roentgenoscopy of the Heart in Exophthalmic Goiter. (Röntgenbefunde bei Kropfherzen.) J. Bauer and F. Helm.
121 Etiology of Diabetes Insipidus. H. Ellern.
122 *Importance of the Antibodies in Tuberculosis. J. Schürer.
123 *Oxygen-Poor Air in Treatment of Anemia. (Therapeutische Verwertung sauerstoffarmer Luft bei Anämien.) O. David.
124 New Method of Percussion. O. Lerch (New Orleans).
125 Banti's Disease and Hemolytic Icterus. F. Lommel.
126 The Proportion of Carbon Dioxid Eliminated with Pulmonary Emphysema. (Verhältnis von CO_2-Ausscheidung zur Atemgrösse beim Lungenemphysem.) R. Reinhardt.

122. **The Significance of Antibodies in Tuberculosis.**—Schürer concludes from a series of experiments with dogs and guinea-pigs, which he describes, that it is doubtful whether the injection of emulsions of bacilli and albumin-free tuberculin has any effect on the resistance to tuberculosis. And it is quite certain that such resistance is not in proportion to the antibodies contained in the blood-serum. He found that animals containing high percentages of agglutinins, precipitins and complement-fixing materials, died as quickly after reinfection as the control animals. He cites Römer's experiments which showed that sheep possessing a marked resistance to reinfection did not have agglutinins or complement-fixing substances in their serum.

123. **Air with a Low Oxygen Content as a Therapeutic Agent in Anemia.**—David found on keeping dogs in a chamber in which the oxygen was reduced to 10 per cent. that there was a marked increase in the number of red blood-cells. This was a real increase in cellular elements, not a mere decrease in fluids. He describes thirteen cases comprising simple anemia, pernicious anemia and chlorosis in which both the number of red cells and the amount of hemoglobin were increased by breathing air containing only 10 per cent. oxygen for one to two hours each day.

Deutsche medizinische Wochenschrift, Berlin

January 2, XXXIX, No. 1, pp. 1-48

127 *Rachitis. H. Ribbert.
128 Choked Disk. (Bedeutung der Stauungspapille.) F. Schleck.
129 Technic and Advantages of Intercricothyroid Laryngotomy. A. Denker.
130 Length of Contagious Period in Syphilis; the Old Rule Still Valid. (Ehekonsens im Lichte der neuen Forschung.) E. Hoffmann.
131 Local Anesthesia for Reduction of Fractures and Dislocations. H. Braun.
132 Experimental Cirrhosis of the Liver After Chronic Alcohol Poisoning. M. Lissauer.
133 *Epidural Injections in Treatment of Sciatica. R. Langbein.
134 The Blood-Picture in Variola and Vaccinia. (Blutbild bei Pocken und Impfpocken.) E. Erlenmeyer.
135 Serodifferentiation of Progressive Paralysis and Dementia Praecox. L. Benedek and S. Deak.

127. **Rachitis.**—Ribbert has been studying for years the bones in rachitis and has found constantly a destructive process involving the cartilage cells. The findings indicate the action of some toxin, and he reiterates that the essence of all morbid processes is a reduction or cessation of the function of the organ. Nature's efforts at repair are unable to restore normal conditions, especially in rachitis, as the injurious toxin acts on the new-forming cartilage and bone as well as on that already formed, thus preventing the normal deposits of calcium salts. The toxin in rachitis is probably generated in some metabolic disturbance from a defective diet.

133. **Treatment of Sciatica with Epidural Injections.**—Langbein gives minute directions for the method of epidural injection of 1 gm. novocain mixed with one-quarter its weight of sodium bicarbonate and one-half its weight of sodium chlorid. This powder is dissolved in 100 c.c. distilled water, cold, and the mixture is injected into the sacral hiatus between the tubercles. After the injection the patient reclines with the shoulders raised and the legs low. If there is a tendency to weakness, the patient is laid horizontal for a few minutes. In fifteen or twenty minutes all symptoms of the sciatica disappear but he keeps the patients in bed for two days. He has thus treated in the last two years twelve patients, all men but one, the age ranging from 18 to 59. Seven were permanently cured. The benefit proved transient in one case, and there is a possibility that the trouble here may be muscular rheumatism; syphilis was a factor in one of the other rebellious cases, and a tendency to exaggerate slight disturbances was probable in two of the others. He advises heat and antineuralgia drugs for two weeks in treatment of inveterate sciatica; if no benefit is apparent, then he makes the epidural injection.

Medizinische Klinik, Berlin

January 5, IX, No. 1, pp. 1-44

136 *Principles of Treatment of Nephritis. (Grundsätze der Nephritisbehandlung.) C. v. Noorden.
137 The Nuclein Metabolism in Gout. (Probleme des Nucleinstoffwechels im Hinblick auf die Lehre der Gicht.) T. Brugsch.
138 Nystagmus as Focal Symptom. (Nystagmus retractorius, ein cerebrales Herdsymptom.) A. Elschnig.
139 Antitoxin Treatment of Diphtheria. (Klinisches und Kritisches zur Behringschen Antitoxinbehandlung der Diphtherie.) F. Reiche.
140 Emergency Tracheotomy. (Die rasche Eröffnung des Kehlkopfs in Fällen dringendster Erstickungsgefahr.) A. Denker.
141 Gynecologic Operations on the Insane. (Diagnose und operative Behandlung der Genitalkrankheiten der weiblichen Irren.) B. S. Schultze.
142 Kidney Disease. (Kritisches zur Lehre von der Nephritis und den Nephropathien.) L. Aschoff.

136. **General Principles for Treatment of Nephritis.**—Von Noorden declares that there is a prevailing tendency to generalize measures which are suitable only for certain forms of kidney disease. He thinks the patients are liable to be kept in bed too long after acute nephritis. When red corpuscles and scraps of epithelium from the kidney are no longer found in the urine then the patient can be allowed to get up; exercise will do him good, but he must be sent back to bed again if they reappear in the urine. The kidneys must be spared as much as possible the work of eliminating salts, water and the metabolic products from protein. The diet should be mainly carbohydrates and, if the albuminuria persists, the diet must be regulated along the lines of that for chronic nephritis. The waste products can be diverted to a certain extent from the kidneys into the intestines by purgatives, and he thinks that these are neglected too much nowadays in both acute and chronic nephritis. Water is the only substance that can be reliably diverted through other channels, but there is no sense in trying to do this unless there is edema. Restriction of the intake is rational and restriction of salt. The latter is useful only when the kidneys find difficulty in eliminating salt. This is the case in parenchymatous nephritis, in secondary contracted kidney and in many cases of acute nephritis. But in the major-

ity of cases of nephritis the capillaries have been injured by toxic action so that elimination of water is more difficult for the kidneys than elimination of salt. The needless restriction of salt in these cases merely makes the patient lose relish for his food and thus run down his strength. Deprival of salt, although such a blessing in certain cases, is a curse when it is applied indiscriminately. The water can be eliminated through the skin in a hot, dry climate, and this is of the greatest benefit as he has witnessed in Egypt. The albuminuria does not seem to be influenced much but the edema subsides and the general health improves. In acute nephritis venesection may prove valuable in emergencies, with decapsulation of the kidney as the last resort. He makes a practice of taking patients with chronic nephritis into his sanatorium for several weeks and studying the diet best suited for the individual case, based on the various functional capacities and the work of the organism as a whole, aiming to keep the patient well nourished, with the least possible demands on the heart and kidneys. He thinks that from 80 to 100 gm. of proteids are necessary; a third of this should be given in the form of meat, that is, about 130 to 160 gm. of meat (weighed raw), taking from 40 to 50 per cent. more in the form of fish than of other meat. An occasional course of iron is also useful. The intake of water should be restricted as a rule to 1.25 or 1.5 liter in the twenty-four hours to spare the heart needless work and keep the blood-pressure down; this amount is sufficient to wash out waste, allowing on one day a week twice the usual amount. More fluid has to be allowed in cases of secondary contracted kidney as the chief danger here is retention of products of metabolism and the heart is not so threatened. He emphasizes further the necessity for avoidance of mental or physical strain, abuse of tobacco, coffee or other substances which have a toxic action on the heart and blood-vessels, altitude and drugs, except heart tonics and diuretics at certain stages. Special care must be taken to avoid and cure bronchitis to which these patients are peculiarly liable, and which is always a danger for the heart, as also any tendency to obesity. The heart should be strengthened by graduated exercises and the peripheral circulation by baths and rubbing. He warns against the use of iodin preparations as the kidneys have trouble in eliminating iodids even more than sodium chlorid.

Mitteilungen aus den Grenzgebieten der Med. und Chir., Jena

XXV, No. 4, pp. 589-796. Last indexed December 14, p. 2193

143 *Deforming Arthritis. (Arthritis hypertrophicans. Beitrag zur Klassifikation der chronischen Gelenkerkrankungen.) E. Jacobsohn.

144 *Advantages of the Diagnostic Intradermal Inoculation of Non-Tuberculous Guinea-Pigs. (Experimentelle Untersuchungen über den beschleunigten Nachweis von Tuberkelbacillen durch den Meerschweinchenversuch.) P. Esch.

145 Behavior of Traumatic Extravasation of Blood in Joints and Pleura. (Verhalten traumatischer Blutergüsse speziell in den Gelenken und der Pleura.) E. Pagenstecher.

146 Histology of Exophthalmic Goiter. (Zur Histologie der Basedowstruma.) P. Zander.

147 *Section of Spinal Roots in Treatment of Gastric and Intestinal Crises. (Zur Frage der Behandlung gastrointestinaler Krisen bei Tabes dorsalis durch Resektion hinterer Dorsalwurzeln.) J. Bungart.

148 Yellow Cerebrospinal Fluid. (Gelbfärbung der Cerebrospinalflüssigkeit.) J. Reich.

149 Thrombosis in Malformed Portal Vein. (Pfortaderthrombose.) G. B. Gruber.

150 *Thymectomy in Exophthalmic Goiter with Myasthenia. Schumacher and Roth.

151 Secondary Nature of Gastric and Duodenal Ulcer. (Das runde Geschwür des Magens und des Zwölffingerdarmes als "zweite Krankheit.") R. Rösste.

143. **Deforming Arthritis.** Jacobsohn illustrates his article with twenty-eight roentgen pictures, aiming to establish that hypertrophic arthritis is a well defined morbid entity. It should be distinguished from other joint affections, especially those with a tendency to degenerative atrophy. He objects to the name deforming arthritis, as the characteristic feature of the affection is the hypertrophy, while this symptom of hypertrophy is not an essential feature in any other joint disease. There is little chance for restitution. Treatment should be based on the axiom "Avoid rest, keep the affected joint well exercised." Repose may alleviate or cure the pain, but under rest the muscles are liable to atrophy. It should be the physician's task to prevent the development of atrophy; only exceptionally should long rest in bed or immobilization be allowed. Too often under rest and sparing the joint the muscles become atrophied, interfering with the gait and causing weakness and edema, impelling the patient to spare the joint more and more until weeks and months may be required to undo the effects if this is ever possible. The physician should insist on exercise of the joint, informing the patients that the trouble is of a chronic character, that it may flare up now and then, and the joint will never be entirely normal again, but that the affection is harmless and work should not be given up on its account as movements of the joint in manual labor guarantee a better outcome than sparing the limb. When there is severe pain in walking and standing, he applies massage and medico-mechanical measures, supplemented by hyperemia treatment (hot air or suction apparatus) and faradization. When the hip joint is involved, an orthopedic apparatus may become necessary but operative intervention is only exceptionally to be considered—only when loose bodies cause pain or become lodged in the joint. He describes the clinical picture and roentgen findings in the various articulations in turn.

144. **Diagnostic Inoculation of Animals.**—Esch reports extensive experimental work in the line of intracutaneous and subcutaneous injection of tuberculous material, his conclusion being that the intracutaneous or intradermal injection is more practical and reliable than any other technic for determining the presence of tubercle bacilli in sputum or other body fluids. He commends this technic as extremely practical. He always inoculates two guinea-pigs after a preceding intracutaneous tuberculin test to exclude spontaneous tuberculosis. The material to be examined is injected into the peritoneum of one of the guinea-pigs, and another dose is injected according to Bloch's technic, namely, injected into the leg directed toward the lymph-node in the bend of the knee after crushing this node between the fingers. As soon as the lymph-node begins to swell, it is excised and examined under the microscope. The advantages of this method are obvious, as the process in the damaged lymph-node can be watched and its progress traced. The second guinea-pig is given a subcutaneous injection. The injection can be made into the heart or a vein if the fluid to be examined is clear. About six days after the inoculation and again three days later the guinea-pigs are tested with tuberculin and again at an interval of three days. If the reaction is positive the animal is killed to supplement the biologic diagnosis with the anatomic findings, especially in the spleen (its weight) and the portal and bronchial lymph-nodes. If the reaction is still negative by the end of the sixth week, one animal is killed to exclude tuberculosis. If the findings are dubious, the other animal is then killed also.

147. **Section of Spinal Roots for Gastric Crises.** Bungart has applied Foerster's operation in three severe cases of gastrointestinal crises. The first patient, a woman of 43, was completely cured of the tendency to crises, with no recurrences to date, over eighteen months, and no injurious by-effects were noted at any time. Normal sensibility rapidly returned although four pairs of roots had been resected in turn. There has been return of the crises in the second case, but they have been much rarer and very much milder than before the operation, and the patient has gained 23 pounds in weight. The gastric crises were also abolished in the third case, with the girdle pains and nausea, but the long stay in bed led to extensive decubitus and suppurative cystitis followed so the man is still confined to bed. Before the operation he was able to be up and about for a few hours each day, although moving with difficulty. It is possible that this aggravation of symptoms might have occurred from the progress of the disease even without the operation. Bungart discusses the technic and the phenomena observed after the operation.

150. **Thymectomy in Exophthalmic Goiter.**—The young woman had primary and very severe exophthalmic goiter with enlarged thymus and extreme weakness of the muscles. Under ten weeks of ordinary measures no benefit was apparent, but the myasthenia rapidly improved after removal of the thymus. A few months later all the symptoms flared up again and part of the thyroid was removed. The patient recovered from the

extensive thyroidectomy so rapidly that the general condition must have been persistently good, and it seems plausible to assume that the thymectomy improved conditions which permitted the thyroidectomy later.

Monatsschrift für Kinderheilkunde, Berlin

XI, No. 8, pp. 337-420

152 *Direct Sunlight in Treatment of Surgical Tuberculosis. Rollier.
153 Salt Fever. (Ueber das sogen. Kochsalzfieber.) R. Bendix and J. Bergmann.
154 Technic for Improved Lactation. (Zur Stilltechnik.) M. Thiemich.
155 Digestive Ferments in Infants. (Nachweis der Verdauungsfermente in den Organen des Magendarmkanals beim Säuglingen.) F. Lust.

152. **Treatment of Surgical Tuberculosis by Exposure to the Sun's Rays.**—Rollier has treated 700 patients with surgical tuberculosis within the past nine years at Leysin, Switzerland, and is convinced that all forms of surgical tuberculosis at any age can be cured by direct exposure to sunlight. Under no circumstances would he open a tuberculous abscess. He keeps his patients in the open air day and night, practically all the year. They are exposed to the sun gradually—at first only the feet for five minutes, three times a day, then the leg up to the knee, then the anus and finally the back and abdomen on the seventh day. Gradually the skin becomes pigmented till it is red or dark brown. This pigmentation seems to be an important factor in the cure. The positive chemotactic action of the leukocytes on the bacteria is materially increased. He regards the dry cold air of high altitudes as a valuable aid to the sunlight. Moreover, the light loses a great part of its effectiveness in traversing lower layers of air filled with dust, microbes and moisture. Plaster casts are never used in connection with this treatment as they cut off the sunlight from the affected parts. Immobilization is effected by linen bands or jackets which can be loosened and expose the part to the sun. Joint function is restored in almost every case. Tuberculous glands are softened and absorbed. One of the most marked characteristics of the sunlight is its analgesic effect; pain stops very early in the treatment. Numerous pictures are given showing not only the healing of the tuberculous lesions but a pronounced improvement in the general condition. (Rollier's work has been described very fully in THE JOURNAL in the last few months, as, for example, in abstract 54, p. 167, Jan. 11, 1913.)

Münchener medizinische Wochenschrift

January 7, LX, No. 1, pp. 1-56

156 Digitalis. E. Romberg.
157 *Testing Coagulability of the Blood. (Technik und Ergebnisse meiner Blutgerinnungsmethode.) W. Schultz.
158 Spontaneous Recovery from Exophthalmic Goiter. (Selbstheilung von Basedowscher Krankheit.) J. A. Grober.
159 Radioactive Substances in Treatment of Malignant Tumors. A. Caan.
160 Prostitution Among Munich Girls Under Age. Rupprecht.
161 Color Sense of Bees. (Ueber den Farbensinn der Bienen und die Blumenfarben.) K. v. Frisch.
162 Chronic Diphtheric Infection of the Lungs in Woman of 62. A. Schmidt.
163 Diagnosis of Perforation of Aneurysm of Artery in Brain. R. Langbein.
164 Tardy Infection with Gonorrheal Ophthalmia. (Spätinfektion der Ophthalmoblennorrhoe.) C. Credé-Hörder.
165 Gastropexy by Means of Ligamentum Teres. E. Pagenstecher.
166 Spontaneous Rupture of Uterus at Third Month of Pregnancy. T. Beyer.

157. **Technic for Determining the Coagulating Time of the Blood.**—Schultz' method is the use of a capillary pipet that looks like a close string of hollow beads. He calls it the *Hohlperlenkapillarmethode* and has the pipet divided into fifteen of the beads. The blood is drawn directly into the capillary and, after waiting about nine minutes, one of the beads is broken off and dropped into 1 c.c. of salt solution. The second bead is broken off after a certain interval, and then the others after regular intervals, each dropped into its separate vessel of salt solution until a bead is reached in which the contents have coagulated so firm that no blood diffuses. This method has been in constant use for over two years and has proved very reliable. He was unable to detect any effect on the coagulation of the blood from administration of calcium salts or citric acid. Gelatin shortened the interval before coagulation; this may be due to agglutination of red corpuscles, increase of fibrinogen or increase in the viscosity of the blood, or all these factors may be involved.

Wiener klinische Wochenschrift, Vienna

January 2, XXVI, No. 1, pp. 1-40

167 *Prophylaxis of Cancer. A. Theilhaber.
168 Parasite-Attracting Action of Atoxyl and Neosalvarsan. L. Arzt and W. Kerl.
169 Intense Eosinophilia in Carcinomatosis and Lymphogranuloma. R. Strisower.

167. **Prophylaxis of Cancer.**—Theilhaber's views in regard to the necessity for warding off recurrence of cancer and for prevention of cancer in general were summarized in these columns Oct. 19, 1912, p. 1499. He here reiterates that cancer never develops in perfectly normal tissues, and that by keeping the vitality of the tissues up to par there will be no cancer. Any apparently trifling injury of the breast should be treated with hyperemia, massage or diathermia, as most convenient, or all combined. In this way he is convinced that many cancers will be warded off. The same principle should be applied to scar tissue anywhere, especially for persons who have already had a cancer removed. The family might be trained to apply the necessary prophylactic measures. More than 75 per cent. of recurring cancers develop in the cicatrix. It seems that Theilhaber had been advocating the application of heat in prophylaxis of cancer long before Bier published his methods of hyperemia treatment.

Zeitschrift für Geburtshülfe und Gynäkologie, Stuttgart

LXXII, No. 2, pp. 253-532. Last indexed December 21, p. 2294

170 Abdominal Cesarean Section. (Abdominale Kaiserschnitte.) P. Schöfer.
171 Ovarian Pregnancy. (Ovarialgravidität.) W. Hannes.
172 Pharmacologic Research on the Musculature of Uterus and Tubes Outside of Organism. W. Rübsamen and N. R. Kligermann.
173 Closure of the Blood-Vessels After Delivery. (Zur Anatomie des Gefässverschlusses post partum.) F. Heckner.
174 Antitrypsin Content of the Blood with Pregnancy and Cancer. (Antitrypsingehalt des Blutes bei Schwangerschaft und Karzinom.) E. v. Graff and J. v. Zubrzycki.
175 Roentgenotherapy in Gynecology. S. Zaretzky.
176 Development of Fetal Pelvis. (Entwicklung des Knorpelbeckens im zweiten Fötalmonat auf Grund von sieben Beckenmodellen.) E. Schwarzenbach.
177 Malformation of Genitals plus Displacement of Kidney. (Fall von Missbildung der Geschlechtsorgane und kongenitaler Verlagerung der Niere.) M. Vromen.
178 *Occupation of Parents as Factor in Physical Development of Child at Birth. (Abhängigkeit der körperlichen Entwicklung Neugeborener vom Berufe der Eltern.) Z. Goldfeld.
179 Origin of Melena Neonatorum. (Zur Entstehung der Malaena neonatorum durch retrograde Embolie, nebst Mitteilung eines Falles von Volvulus beim Neugeborenen.) F. Wolff.
180 *Serodiagnosis of Pregnancy. J. Veit.

178. **Occupation of the Parents as Factor in Development of Child at Birth.**—Goldfeld gives tables to show the average weight and size of the children of teachers, hotelkeepers, merchants, butchers, carpenters, bakers, masons, mechanics, factory workers and printers, classifying the children as they were the first, second, third or later children. The research was undertaken at Würzburg and showed several interesting general rules; for instance, that the later children average 116.5 gm. more in weight than the first child. The weight of the child at birth seems to increase with the age of the mother, and the boys weigh more than the girls. The physical development of the child seems on a par with the financial standing of the parents. It is highest in the families of teachers and lowest among the day laborers. It is striking that the standard is so high in factory workers' families, and Goldfeld ascribes this to the national insurance, the societies writing industrial insurance having inaugurated measures to conserve the health of women during child-bearing. The tables show anew the familiar fact that those who are less financially fitted for it are the ones who procreate with the least scruples.

180. **Serodiagnosis of Pregnancy.**—Veit confirms Abderhalden's assertions in regard to the possibility and importance of serodiagnosis of pregnancy as discussed editorially in THE JOURNAL, Sept. 14, 1912, p. 881 and December 7, p. 2073, with abstract December 21, p. 2291. The serodiagnosis is based on properties of the placenta, not of the fetus, and there must be considerable placenta tissue present for the reaction to be positive. Consequently it is not absolutely reliable for the diagnosis of normal pregnancy, but even without this it may

be of the greatest importance to differentiate a tubal pregnancy from a tumor in the ovary or tube. The method may also prove useful in the diagnosis of a chorioepithelioma. The method is instructive from the standpoint of physiology, and further research along these lines will certainly lead to much progress. The technic requires skill, but it is well repaid by such a case as one described in which there had been no menstruation for several months and the uterus was enlarged. The patient was unmarried and the general aspect was that of a pregnancy, but the negative reaction to the serodiagnosis test excluded pregnancy. Consequently Veit cut into the uterus with confidence and enucleated a large myoma found in the non-gravid organ.

Zentralblatt für Chirurgie, Leipsic

December 28, XXXIX, No. 52, pp. 1761-1784

181 *Simple Operation for Hemorrhoids. C. Bayer.

January 4, XL, No. 1, pp. 1-40

182 Ascites Drained Permanently Through Silver Tube Into Subcutaneous Tissue. Perimoff.
183 Operative Treatment of Congenital Stenosis of the Pylorus. C. Rammstedt.
184 Systematic Dilatation of Duodenal Papilla and Draining of Common Bile Duct Into Duodenum. F. v. Hofmeister.

181. **Operation for Hemorrhoids.**—Bayer calls attention to the technic which he has been using for years with constantly satisfactory results, and no tendency to after-hemorrhage, embolism or stenosis. The nodule is drawn out as far as possible after the anus has been stretched with the fingers. Then an incision 2 cm. long is made with the actual cautery at the

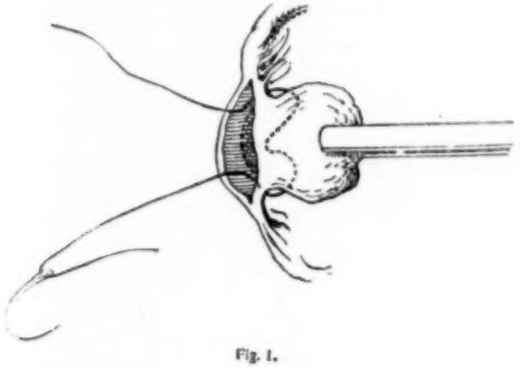

Fig. 1.

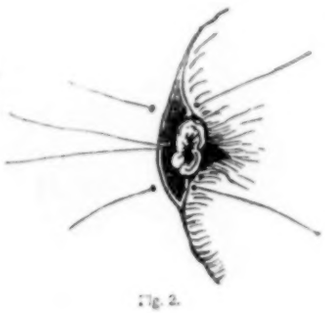

Fig. 2.

junction of the mucous membrane with the skin, the incision being carried in deep enough to separate the entire clump of varicose veins, with the mucosa, from the skin. A stout silk thread is then passed around the stem of the nodule, introduced through the incision, passed around the upper half of the mucosa-covered pedicle and then through a fold at the junction with the normal mucosa, then around the lower half of the pedicle and out through the incision. The thread is drawn tight and tied in the gaping incision. The nodule is then cut off with the cautery just above the ligature and the stump dusted with iodoform. Each of the nodules is treated thus in turn. When the ends of the threads are drawn up together, a funnel-shaped depression is left in the normal mucosa lining of the bowel and a drain tube wrapped in iodoform gauze, held with a safety pin, is pushed into this tunnel. The threads are cut off short, the fissure of the incision is packed with gauze and a dressing of aluminum acetate is applied over the whole. The ligature threads soon drop off. If the nodules form a ring, they can be drawn out separately but it is important to leave enough mucosa between each pedicle to guarantee against stenosis. The edge of the mucosa can be fastened to the edge of the skin to bring the mucosa down into place in case of traction. The only complication he has ever had with this method is the occasional necessity for catheterization for a day or so.

Zentralblatt für Gynäkologie, Leipsic

December 28, XXXVI, No. 52, pp. 1753-1784

185 Strangulation of Anterior Lip of Uterine Cervix by a Pessary. E. Vogt.

January 4, XXXVII, No. 1, pp. 1-48

186 Care of Wound After Operation for Cancer of Uterine Cervix. E. Bumm.
187 *Acute Tuberculosis Developing After Gynecologic Operations. L. Prochownick.
188 Intraperitoneal Shortening of Round Ligaments. E. Langes.
189 Intestines Compressed Between Gravid Uterus and Spine. (Darmverschluss nach Entbindungen bei plattem bzw. rachitisch plattem Becken.) Rieck.

187. **Acute Tuberculosis After Gynecologic Operations.**—Prochownick reports seven cases in which acute fatal tuberculosis developed after an operation on the genitals. In one case two old small and symptomless foci in the lungs were evidently the source of the trouble. In another case the operation was for the purpose of removing a tuberculous process in the genital organs and although the local process healed, yet the infection proceeded to invade other regions but in such an insidious way as to make no sign for a long time. In the other five cases there was nothing to suggest tuberculosis except in one case possibly suspicious slight findings in one lung and one woman's husband was tuberculous. Neither these lung findings nor the tuberculous husband would be regarded by any one as contraindicating a gynecologic operation, the patient's general condition being good and the constitution robust. But all these women developed after a major or minor gynecologic operation acute and fatal tuberculosis from some previously unsuspected focus. There were no signs of involvement of lungs or pleura until late in the disease and no sputum. The findings suggested miliary tuberculosis in some of the cases. The experiences related disprove Krönig's statements that genital tuberculosis does not lead to miliary tuberculosis or only in extremely rare cases, and that genital tuberculosis scarcely ever proves fatal, either directly or indirectly.

Zentralblatt für innere Medizin, Leipsic

January 4, XXIV, No. 1, pp. 1-32

190 Diastase Content of Stools with Fermentation Dyspepsia. (Diastasegehalt der Fäces bei Gärungsdyspepsie.) J. Arnold.

Gazzetta degli Ospedali e delle Cliniche, Milan

January 2, XXXIV, No. 1, pp. 1-8

191 Technic for Examination of Cerebrospinal Fluid. (I metodi d'esame del liquido cerebrospinale.) Pari.

January 5, No. 2, pp. 9-24

192 Pathogenesis of Arterial Hypertension in Nephritis. A. Farini.
193 Treatment of Fractures. (Brevi considerazioni sugli interventi incruenti nella cura delle fratture.) G. Giacquinta.

January 7, No. 3, pp. 25-32

194 Fate of Tubercle Bacilli in the Blood-Vessels. (La sorte dei bacilli tubercolari dentro i vasi sanguigni.) G. Costantini.

Brazil Medico, Rio de Janeiro

December 15, XXVI, No. 47, pp. 491-500

195 *False Rabies. (Peste de coçar—Pseudo-raiva, paralysia bulbar infectuosa ou molestia de Aujeszky.) A. Carini and J. Maciel.
196 The General Sanitary Influence of the Atmosphere. B. Barreto. Commenced in No. 45.

December 22, No. 48, pp. 501-512

197 The Associated Movements in Athetosis. A. de Castro.
198 Fat Tissue as Support for Artificial Eye. (O enxerto de tecido gordoroso como meio de melhorar a applicação dos olhos artificiaes.) E. Campos.
199 Urethritis and Its Consequences. B. P. Leme.

195. **Pseudorabies.**—Carini and Maciel have had opportunity to inspect a number of animals with this disease which affects cattle, cats and dogs and can readily be transmitted to laboratory animals. The manifestations of the disease and the results of experimental inoculation correspond exactly, they say, to the disease described by Aujeszky under the name of infectious bulbar paralysis. This has been officially reported only in Hungary, but the pseudorabies reported by Carini and Maciel is quite prevalent in Brazil. It never causes large epidemics but a number of small ones, so that the total loss from it is quite serious. The animal becomes very restless and scratches, with its own paws or against trees or walls, with such violence that it digs into the flesh. In the animals inoculated in the laboratory they gnawed fiercely at the point of

inoculation, one of them tearing out its claws on the paw that had been inoculated. The period of incubation was from twelve to fifteen days, but the disease itself is of short duration and is generally fatal in one or two days. The seat of the intense pruritus is generally in the perineal region or the inside of the thighs. The animal grits its teeth and saliva flows profusely. After a few hours the animal falls exhausted and never gets up again. The virus is not filterable, but otherwise the bacteriologic research was constantly negative.

Revista de Medicina y Cirugia, Havana

January 10, XVIII, No. 1, pp. 1-28

200 Urethroscopy by Goldschmidt's Method. E. Fortun.
201 The Heart in the Tuberculous. A. Inclan.
202 Action and Influence of Parasites in the Body. (Parasitismo.) J. B. Pons.
203 Hygiene in Match Factories. (La higiene dental en las fabricas de cerillas.) J. F. Arteaga.

Semana Medica, Buenos Aires

December 12, XIX, No. 50, pp. 1221-1279

204 Polyneuritis from Pregnancy Auto-Intoxication. (Una manifestacion poco comun de auto-intoxicacion gravidica.) J. A. Gabaston.
205 The Sources of Degeneracy of the Race. (Las fuentes de la degeneracion.) G. von Bunge.
206 Can the Will Power Be Measured? (La potencia volitiva. Es medible?) V. M. Farre. Commenced in No. 28.
207 The School as Factor in Tuberculosis. (La escuela y la lucha contra la tuberculosis.) A. Pruneda.

Hospitalstidende, Copenhagen

January 1, LVI, No. 1, pp. 1-24

208 *Sagging Stomach with Dilatation of Esophagus. (Tilfælde af total Gastroptose med Dilatation af Spiserøret.) T. Rovsing.
209 *Epidemiology of Scarlet Fever. (Til Skarlagensfeberens Epidemiologi.) S. Hansen.

208. **Gastroptosis and Dilatation of Esophagus.**—Rovsing's first patient, a woman of 45, had such a sagging of the stomach and liver that the cardia was 8 cm. below the diaphragm and the esophagus had been dragged down and kinked. The case was an extreme example of what he calls ptosis cachexia, illustrating anew that gastrocoloptosis may bring a person to the brink of the grave from inanition, and also that gastropexy transforms conditions at once and restores the patient to health in a short time. He has now a record of fifty such cases among his gastroptosis patients. The case in question was the only one with the complicating enormous dilatation of the esophagus. Cancer of the esophagus seemed the most plausible diagnostic assumption in view of the advanced cachexia, but the easy passage of the stomach tube into the stomach excluded this. Cardiospasm was next considered, the symptoms pointing to this, and Rovsing is confident that many cases on record of supposed cardiospasm were in reality merely conditions secondary to gastroptosis. Spasm of other sphincters is usually accompanied by pain, and the absence of pains with "cardiospasm" should suggest revision of the diagnosis. A special feature of the gastroptosis cases is the characteristic vomiting immediately after eating. This is generally considered a purely hysteric or nervous phenomenon, and this may be the case in certain individuals, but in others it is a symptom of gastroptosis and it disappears with the correction of the latter by gastropexy or the wearing of a support. He relates the details of two typical cases: in the first a woman of 48 was supposed to have a stricture in the esophagus, as she had long suffered from cardialgia and for two weeks had vomited all the solid food eaten, immediately after each meal; she had a feeling that the food was arrested at the cardia. Gastroptosis was discovered and with the use of a supporting appliance all disturbances ceased. The other patient was a woman of 23 who had suffered as long as she could remember from vomiting immediately after each meal. Only when she took her food lying down did she escape the vomiting. Gastroptosis was not evident on roentgenoscopy but coloptosis and an abnormally long gastrocolic ligament were discovered. Auscultation, however, showed that the lesser curvature lay below the umbilicus, the greater curvature 5 cm. below, and the transverse colon just above the symphysis. After gastropexy and shortening of the ligament there has never been any recurrence of the vomiting, and the young woman's stomach and bowel functioning has been normal during the fifteen months since. The experiences related confirm the necessity for examining for gastroptosis in every case of dilatation of the esophagus as the latter may be due merely to kinking from sagging of the stomach.

209. **Scarlet Fever.**—Hansen refers to an epidemic of scarlet fever in Copenhagen between 1868 and 1873 in which the 5,611 cases had a mortality ranging progressively from 4 per cent. of the 359 cases in the first year to 22 per cent. in the 242 cases of the last of the six years, showing the increasing malignancy of the disease. This epidemic was further interesting because then it subsided entirely. Nearly a year elapsed before a new epidemic broke out. The disease was mild at first but rapidly assumed a malignant, atypical and long drawn out character. He remarks that as small-pox has changed its character under vaccination and isolation, scarlet fever likewise is biologically different from what it used to be.

Hygiea, Stockholm

November, LXXIV, No. 11, pp. 1185-1296

210 Sterility in Women. (Om sterilliteten hos kvinnan.) C. D. Josephson.
211 Technic for Resection of Large Intestine. (Om groftarmsresektioner med anledning af några fall.) B. Carlson.

Norsk Magazin for Lægevidenskaben, Christiania

January, LXXIV, No. 1, pp. 1-182 and Supplement

212 Tuberculosis in Children. (Bidrag til kjendskapet til tuberkulosen i barnealderen: Hyppighet. Formerne av tuberkulosen i spaedbarnsalderen. Medfødt tuberkulose.) F. Harbitz.
213 Traumatic Stasis Cyanosis. (Stasebloedninger ved kompression av kroppen.) W. Holland.
214 *Predisposition of Women for Goiter. (Kjønsdisposition for struma.) C. Schiøtz.
215 *Acute Hemorrhagic Pancreatitis. S. Widerøe.
216 Competitive Athletics and the Physician's Responsibility. (Lægerne og idrætten.) P. Torgersen.
217 Bacteriology of Tuberculosis in Children. (Bakteriologiske studier over barnetuberkulose.) A. de Besche.

214. **Predisposition of the Sexes to Goiter.**—Schiøtz states that he has encountered 177 cases of goiter during the last five years at Nes in the Hedemarken district in southern Norway, close to Sweden. Of the total number only 10.2 per cent. were male patients. Figuring it from another standpoint, he says that 10.5 per cent. of the 1,707 male inhabitants of the town had goiter and 86.3 per cent. of the 1,843 female inhabitants. The preponderance of the female sex has been used as an argument against the drinking-water theory of the origin of goiter, but this can be answered by the assumption that the physiologic processes in the female organs with an internal secretion may predispose the thyroid gland to disease. Pregnancy is known to play an important part in the development of goiter, tetany, exophthalmic goiter and myxedema. One of Schiøtz' patients noticed that the enlarged thyroid grew transiently larger just before each menstrual period, and Cohn reported in 1907 a case in which transient exophthalmos, palpitations and enlargement of the thyroid recurred with every menstrual period.

215. **Acute Hemorrhagic Pancreatitis.**—In the fatal case reported the patient was a woman of 46, v-para, never seriously sick. For a month she had felt unwell and then severe pain in the abdomen, especially in the epigastrium, and cyanosis, compelled a laparotomy. Necropsy three days later confirmed the diagnosis of hemorrhagic-necrotic pancreatitis and revealed thrombosis in the portal vein system and a number of gall-stones in the gall-bladder. The patient was quite corpulent and the findings suggested that compression of the portal vein by the gall-stones injured the vessel, arrested the circulation through it, disturbing the nourishment of the region and injuring the fat tissue in particular. Widerøe is now seeking by animal experimentation to sustain this theory of a primary vascular derangement as the cause of the trouble in a certain proportion of cases of acute hemorrhagic pancreatitis.

Ugeskrift for Læger, Copenhagen

January 2, LXXV, No. 1, pp. 1-50

218 Action of Medical Measures on Gastric Motor Disturbances. (Den medicinske Behandlings Indvirkning paa Ventriklens Motilitetsforstyrrelser.) S. Kemp.

January 9, No. 2, pp. 51-82

219 Fistulas Into the Lung. (Om Lungethoraxfistler.) A. O Wolff.
220 Orthopedic Treatment at the Right Time. (Om rettidig Behandling af nogle orthopædiske Lidelser.) H. Scheuermann.